

DAP-2590

Release 1.10

AirPremier N

Dual Band PoE Access Point



User Manual

Business Class Networking

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Package Contents

- D-Link DAP-2590 AirPremier N Dual Band PoE Access Point
- Power Adapter
- Manual on CD
- Ethernet Cable
- Mounting Plate
- Quick Installation Guide

Warning: Using a power adapter with different specifications than the one included with the **DAP-2590** will cause damage and void the warranty for this product.

If any of the above items are missing, please contact your reseller.

Minimum System Requirements

- Computers with Windows®, Macintosh®, or Linux-based operating systems with an installed Ethernet adapter
- Internet Explorer version 7.0 and above or Firefox version 3.0 and above.

Introduction

D-Link, an industry pioneer in wireless networking, introduces a solution for businesses seeking to deploy next generation draft 802.11n LANs. D-Link unveils its new AirPremier N Dual Band PoE Access Point (DAP-2590), designed specifically for business-class environments such as large or enterprise corporations to provide secure and manageable dual band wireless LAN options for network administrators.

Versatile Access Point

The AirPremier N Dual Band PoE Access Point allows network administrators to deploy a highly manageable and extremely robust dual band wireless network. All three dual band antennas are detachable and can provide optimal wireless coverage in either 2.4GHz (802.11g and draft 2.0 802.11n) or 5GHz (802.11a and draft 2.0 802.11n) bands. Enclosed in a plenum-rated metal chassis, the AirPremier N Dual Band PoE Access Point adheres to strict fire codes for placement in air passageways. For advanced installations, this new high-speed Access Point has integrated 802.3af Power over Ethernet (PoE) support, allowing installation of this device in areas where power outlets are not readily available.

Enhanced Performance

The AirPremier N Dual Band PoE Access Point delivers reliable wireless performance with maximum wireless signal rates of up to 300Mbps¹ in either the 2.4GHz or 5GHz wireless band. This, coupled with support for Wi-Fi Multimedia™ (WMM) Quality of Service features, makes it an ideal access point for audio, video, and voice applications. Additionally, the DAP-2590 supports load balance features to ensure maximum performance.

Security

To help maintain a secure wireless network, the AirPremier N Dual Band PoE Access Point provides the latest in wireless security technologies by supporting both Personal and Enterprise versions of WPA and WPA2 (802.11i) with support for RADIUS server backend. To further protect your wireless network, MAC Address Filtering, Wireless LAN segmentation, Disable SSID Broadcast, Rogue AP Detection, and Wireless Broadcast Scheduling are also included.

The AirPremier N Dual Band PoE Access Point includes support for up to 8 VLANs for implementing multiple SSIDs to further help segment users on the network. The DAP-2590 also includes a wireless client isolation mechanism, which limits direct client-to-client communication.

Features and Benefits

- Four different operation modes - Capable of operating in one of four different operation modes to meet your wireless networking needs: Access Point, WDS with AP, WDS, or Wireless Client.
- Faster wireless networking with the 802.11n (draft) standard to provide a maximum wireless signal rate of up to 300 Mbps*.
- Compatible with the 802.11b standard to provide a wireless data rate of up to 11 Mbps, allowing you to migrate your system to the 802.11n (draft) and 802.11g standards on your own schedule without sacrificing connectivity.
- Compatible with the 802.11g standard to provide a wireless data rate of up to 54 Mbps in the 2.4 GHz frequency range.
- Compatible with the 802.11a standard to provide a wireless data rate of up to 54 Mbps in the 5 GHz frequency range.
- Better security with WPA - The DAP-2590 can securely connect wireless clients on the network using WPA (Wi-Fi Protected Access) to provide a much higher level of security for your data and communications than its previous versions.
- AP Manager II management software - The real-time display of the network's topology and AP's information makes network configuration and management quick and simple.
- SNMP for management - The DAP-2590 is not just fast, but also supports SNMP v.3 for better network management. Superior wireless AP manager software is bundled with the DAP-2590 for network configuration and firmware upgrade. Systems administrators can also set up the DAP-2590 easily with the Web-based configuration. A D-Link D-View 6.0 module will be downloadable for network administration and real-time network traffic monitoring with D-Link D-View 6.0 software.
- Utilizes OFDM technology (Orthogonal Frequency Division Multiplexing).
- Supports 802.3af Power over Ethernet.
- Supports one 10/100/1000M Ethernet port.
- Operates in the 2.4~2.5 GHz or 5.15~5.85 GHz** frequency ranges.
- Web-based interface for managing and configuring.

* Maximum wireless signal rate derived from IEEE Standard 802.11g, 802.11a and Draft 802.11n specifications. Actual data throughput will vary. Network conditions and environmental factors, including volume of network traffic, building materials and construction, and network overhead, lower actual data throughput rate. Environmental conditions will adversely affect wireless signal range.

**Please note that operating frequency ranges vary depending on the regulations of individual countries and jurisdictions. The DAP-2590 isn't supported in the 5.25~5.35 GHz and 5.47 ~ 5.725 GHz frequency ranges in some regions.

Wireless Basics

D-Link wireless products are based on industry standards to provide high-speed wireless connectivity that is easy to use within your home, business or public access wireless networks. D-Link wireless products provides you with access to the data you want, whenever and wherever you want it. Enjoy the freedom that wireless networking can bring to you.

WLAN use is not only increasing in both home and office environments, but in public areas as well, such as airports, coffee shops and universities. Innovative ways to utilize WLAN technology are allowing people to work and communicate more efficiently. Increased mobility and the absence of cabling and other types of fixed infrastructure have proven to be beneficial to many users.

Wireless adapter cards used on laptop and desktop systems support the same protocols as Ethernet adapter cards, allowing wireless users to use the same applications as those used on a wired network.

People use WLAN technology for many different purposes:

Mobility - productivity increases when people can have access to data in any location within the operating range of their WLAN. Management decisions based on real-time information can significantly improve the efficiency of a worker.

Low implementation costs - WLANs are easy to set up, manage, change and relocate. Networks that frequently change can benefit from WLAN's ease of implementation. WLANs can operate in locations where installation of wiring may be impractical.

Installation and network expansion - by avoiding the complications of troublesome cables, a WLAN system can be fast and easy during installation, especially since it can eliminate the need to pull cable through walls and ceilings. Wireless technology provides more versatility by extending the network beyond the home or office.

Inexpensive solution - wireless network devices are as competitively priced as conventional Ethernet network devices. The DAP-2590 saves money by providing users with multi-functionality configurable in four different modes.

Scalability - Configurations can be easily changed and range from Peer-to-Peer networks, suitable for a small number of users to larger Infrastructure networks to accommodate hundreds or thousands of users, depending on the number of wireless devices deployed.

Standards-Based Technology

The DAP-2590 Wireless Access Point utilizes the 802.11a, 802.11b, 802.11g, and 802.11n (draft) standards.

The IEEE 802.11n (draft) standard is an extension of the 802.11a, 802.11b, and 802.11g standards that came before it. It increases the maximum wireless signal rate up to 300 Mbps* within both the 2.4 GHz and the 5 GHz bands, utilizing OFDM technology.

This means that in most environments - within the specified range of this device - you will be able to transfer large files quickly, or even watch a movie in MPEG format over your network without noticeable delays. This technology works by transmitting high-speed digital data over a radio wave utilizing OFDM (Orthogonal Frequency Division Multiplexing) technology. OFDM works by splitting the radio signal into multiple smaller sub-signals that are then simultaneously transmitted at different frequencies to the receiver. OFDM reduces the amount of crosstalk (interference) in signal transmissions.

The D-Link DAP-2590 will automatically sense the best possible connection speed to ensure the greatest possible speed and range.

802.11n offers the most advanced network security features available today, including WPA.

* Maximum wireless signal rate derived from IEEE Standard 802.11g, 802.11a and Draft 802.11n specifications. Actual data throughput will vary. Network conditions and environmental factors, including volume of network traffic, building materials and construction, and network overhead, lower actual data throughput rate. Environmental conditions will adversely affect wireless signal range.

Installation Considerations

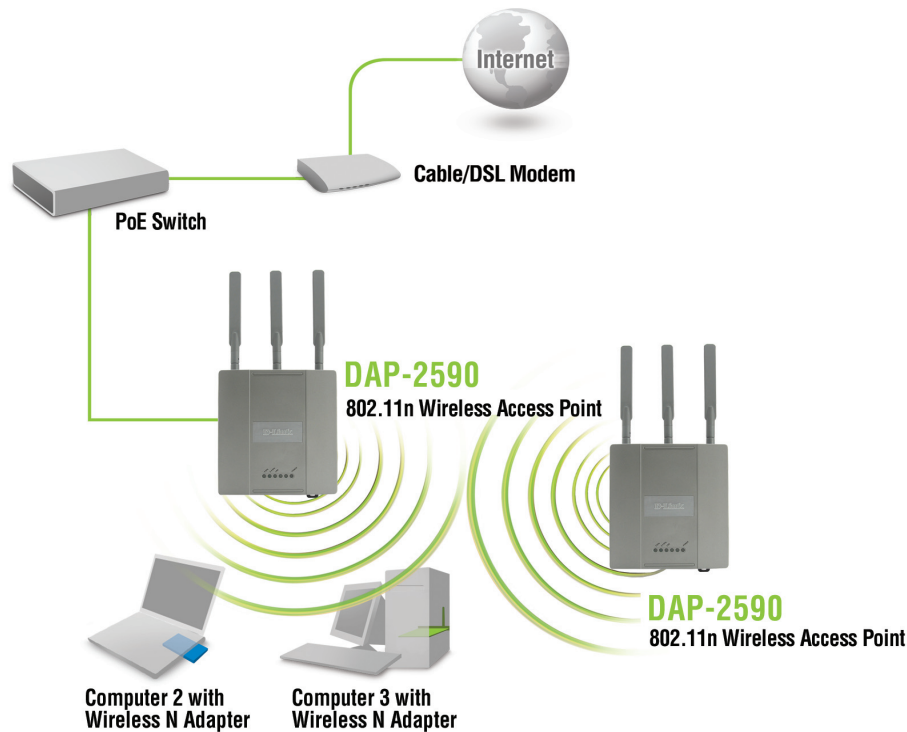
The D-Link DAP-2590 lets you access your network, using a wireless connection, from virtually anywhere within its operating range. Keep in mind, however, that the number, thickness and location of walls, ceilings, or other objects that the wireless signals must pass through, may limit the range. Typical ranges vary depending on the types of materials and background RF (radio frequency) noise in your home or business. The key to maximizing wireless range is to follow these basic guidelines:

- 1** Keep the number of walls and ceilings between the DAP-2590 and other network devices to a minimum - each wall or ceiling can reduce your DAP-2590's range by 3-90 feet (1-30 meters). Position your devices so that the number of walls or ceilings is minimized.
- 2** Be aware of the direct line between network devices. A wall that is 1.5 feet thick (0.5 meters), at a 45-degree angle appears to be almost 3 feet (1 meter) thick. At a 2-degree angle, the wall appears to be over 42 feet (14 meters) thick! Position your devices so that the signal will travel straight through a wall or ceiling - instead of at an angle - for better reception.
- 3** Building materials can impede the wireless signal - a solid metal door or aluminum studs can have a negative effect on range. Try to position wireless devices and computers with wireless adapters so that the signal passes through drywall or open doorways, and not through other materials.
- 4** Keep your product away - at least 3-6 feet or 1-2 meters - from electrical devices or appliances that generate RF noise.
- 5** If you are using 2.4 GHz cordless phones or X-10 (wireless products such as ceiling fans, lights, and home security systems), your wireless connection may degrade dramatically or drop completely. Make sure your 2.4 GHz phone base is as far away from your wireless devices as possible. The base transmits a signal even when the phone is not in use.

Four Operational Modes

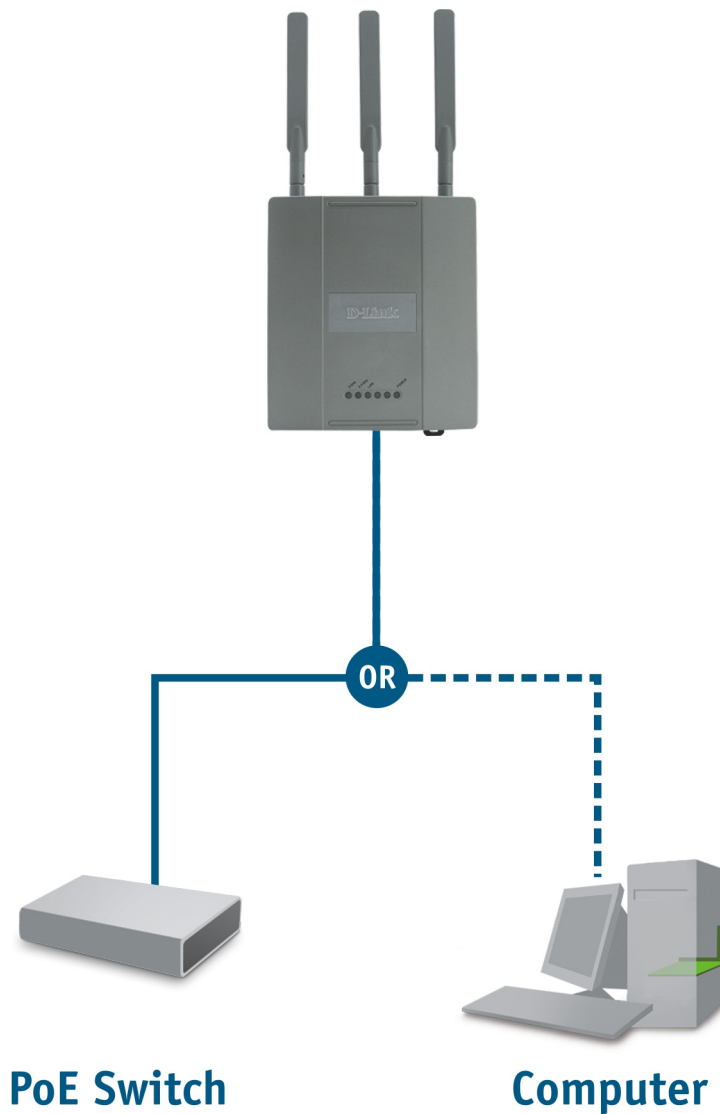
Operation Mode (Only supports 1 mode at a time)	Function
Access Point (AP)	Create a wireless LAN
WDS with AP	Wirelessly connect multiple networks while still functioning as a wireless AP
WDS	Wirelessly connect multiple networks
Wireless Client	AP acts as a wireless network adapter for your Ethernet enabled device

Getting Started



- 1 You will need broadband Internet access.
- 2 Consult with your cable or DSL provider for proper installation of the modem.
- 3 Connect the cable or DSL modem to a router. See the printed Install Guide included with your router.
- 4 See the printed Install Guide included with the DAP-2590.
- 5 If you are connecting a desktop computer to your network, install a wireless PCI adapter into an available PCI slot on your desktop computer.
- 6 Install the drivers for your wireless CardBus adapter into a laptop computer.

Connecting PoE (Power over Ethernet)



Connect one end of an Ethernet cable (included with your package) to the LAN port on the DAP-2590 and the other end of the Ethernet cable to either your computer or to your PoE switch. The AP can be powered on by a PoE switch or by the power adapter shipped with the AP.

Using the Configuration Menu

To configure the DAP-2590, use a computer that is connected to the DAP-2590 with an Ethernet cable (see the *Network Layout diagram*).

First, disable the **Access the Internet using a proxy server** function. To disable this function, go to **Control Panel > Internet Options > Connections > LAN Settings** and uncheck the enable box.

Start your web browser program (Internet Explorer, Mozilla Firefox).

Type the IP address and http port of the DAP-2590 in the address field (http://192.168.0.50) and press **Enter**. Make sure that the IP addresses of the DAP-2590 and your computer are in the same subnet.



After the connection is established, you will see the user identification window as shown.

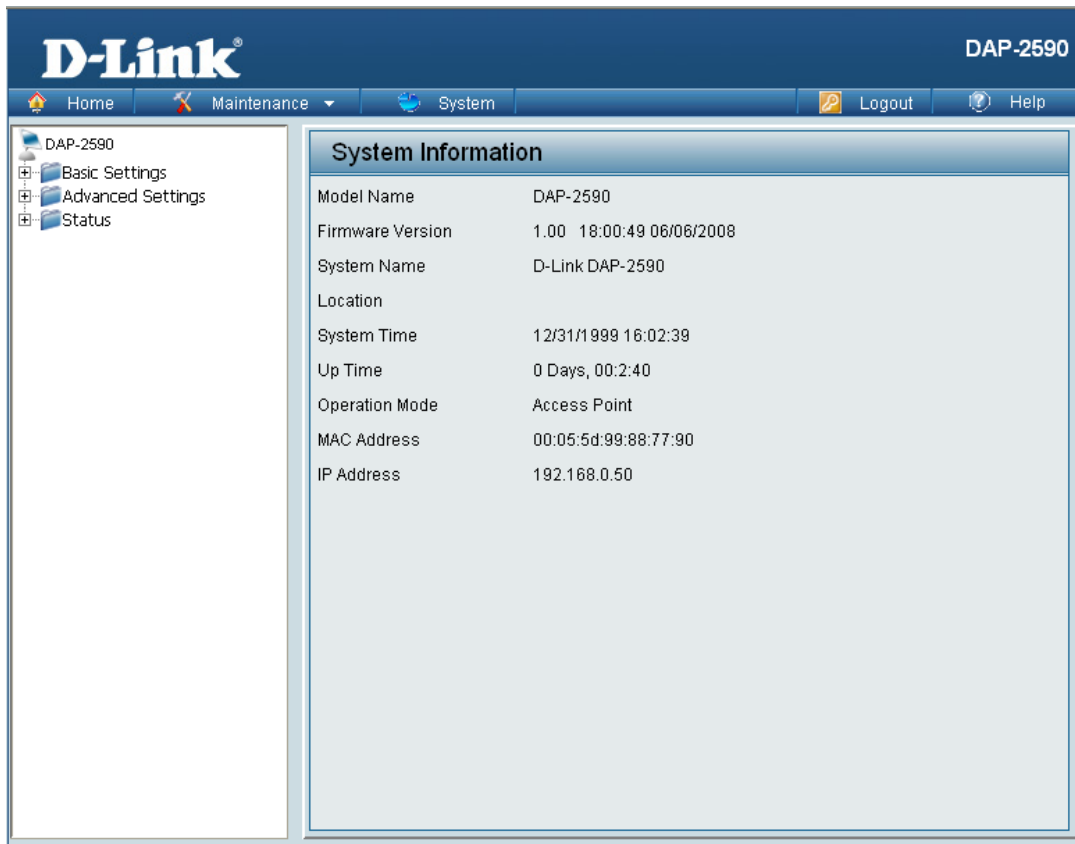
Note: If you have changed the default IP address assigned to the DAP-2590, make sure to enter the correct IP address.

- Type **“admin”** in the **User Name** field.
- Leave the **Password** field blank.
- Click the **Login** button.

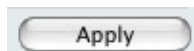
A screenshot of the D-Link DAP-2590 configuration page. The page has a dark blue header with the "D-Link" logo on the left and "DAP-2590" on the right. Below the header is a light blue box containing a "LOGIN" section. The text "Login to the Access Point:" is followed by two input fields: "User Name" with the text "admin" entered, and "Password" which is empty. A "Login" button is positioned to the right of the password field.

Note: If you have changed the password, make sure to enter the correct password.

After successfully logging into the DAP-2590 the following screen will appear:



When making changes on most of the configuration screens in this section, use the **Apply** button at the bottom of each screen to save your configuration changes.



Click the **Apply** button to configure changes.

Home > Basic Settings > Wireless > Access Point mode

The screenshot shows the D-Link DAP-2590 configuration interface. The top navigation bar includes 'Home', 'Maintenance', 'System', 'Logout', and 'Help'. The left sidebar shows a tree view with 'DAP-2590' expanded to 'Basic Settings', which includes 'Wireless', 'LAN', 'Advanced Settings', and 'Status'. The main content area is titled 'Wireless Settings' and contains the following fields:

- Wireless Band: 2.4GHz
- Mode: Access Point
- Network Name (SSID): dlink
- SSID Visibility: Enable
- Auto Channel Selection: Enable
- Channel: 6
- Channel Width: 20 MHz
- Authentication: Open System

Below these settings is a 'Key Settings' section with the following options:

- Encryption: Disable Enable
- Key Type: HEX
- Key Size: 64 Bits
- Key Index(1~4): 1
- Network Key: [Empty text box]
- Confirm Key: [Empty text box]

An 'Apply' button is located at the bottom right of the configuration area.

Wireless Band: Select either **2.4 GHz** or **5 GHz** from the pull-down menu.

Mode: Select **Access Point** from the pull-down menu. The other three choices are **WDS with AP**, **WDS**, and **Wireless Client**.

Network Name (SSID): Service Set Identifier (SSID) is the name designated for a specific wireless local area network (WLAN). The SSID's factory default setting is **dlink**. The SSID can be easily changed to connect to an existing wireless network or to establish a new wireless network. The SSID can be up to 32 characters and is case-sensitive.

SSID Visibility: **Enable** or **Disable** SSID visibility. Enabling this feature broadcasts the SSID across the network, thus making it visible to all network users.

Auto Channel Selection: Enabling this feature automatically selects the channel that provides the best wireless performance. **Enable** is set by default. The channel selection process only occurs when the AP is booting up.

- Channel:** All devices on the network must share the same channel. To change the channel, first toggle the Auto Channel Selection setting to **Disable**, and then use the pull-down menu to make the desired selection. (Note: The wireless adapters will automatically scan and match the wireless settings.)
- Channel Width:** Allows you to select the channel width you would like to operate in. Select **20 MHz** if you are not using any 802.11n wireless clients. **Auto 20/40 MHz** allows you to both 802.11n and non-802.11n wireless devices on your network.
- Authentication:** Use the pull-down menu to choose **Open System**, **Shared Key**, **WPA-Personal**, or **WPA-Enterprise**.
Select **Open System** to communicate the key across the network.
Select **Shared Key** to limit communication to only those devices that share the same WEP settings. If multi-SSID is enabled, this option is not available.
Select **WPA-Personal** to secure your network using a password and dynamic key changes. No RADIUS server is required.
Select **WPA-Enterprise** to secure your network with the inclusion of a RADIUS server.

Home > Basic Settings > Wireless > WDS with AP mode

The screenshot shows the D-Link configuration web interface for the DAP-2590. The main navigation menu includes Home, Maintenance, System, Logout, and Help. The left sidebar shows a tree view with Basic Settings (selected), Wireless, LAN, Advanced Settings, and Status. The main content area is titled 'Wireless Settings' and contains the following fields and sections:

- Wireless Band:** 2.4GHz
- Mode:** WDS with AP
- Network Name (SSID):** dlink
- SSID Visibility:** Enable
- Auto Channel Selection:** Disable
- Channel:** 6
- Channel Width:** 20 MHz
- WDS:** Remote AP MAC Address (8 input fields numbered 1-8)
- Site Survey:** Scan button and a table with columns CH, Signal, BSSID, Security, and SSID.
- Authentication:** Open System
- Key Settings:** Encryption (Disable selected, Enable unselected), Key Type (HEX), Key Size (64 Bits), Key Index (1), Network Key, and Confirm Key.

An 'Apply' button is located at the bottom right of the configuration area.

In WDS with AP mode, the DAP-2590 wirelessly connects multiple networks while still functioning as a wireless AP.

- Wireless Band:** Select either **2.4 GHz** or **5 GHz** from the pull-down menu.
- Mode:** **WDS with AP** mode is selected from the pull-down menu.
- Network Name (SSID):** Service Set Identifier (SSID) is the name designated for a specific wireless local area network (WLAN). The SSID's factory default setting is **dlink**. The SSID can be easily changed to connect to an existing wireless network or to establish a new wireless network.
- SSID Visibility:** **Enable** or **Disable** SSID visibility. Enabling this feature broadcasts the SSID across the network, thus making it visible to all network users.

Auto Channel Selection:	Enabling this feature automatically selects the channel that will provide the best wireless performance. This feature is not supported in WDS with AP mode. The channel selection process only occurs when the AP is booting up.
Channel:	All devices on the network must share the same channel. To change the channel, use the pull-down menu to make the desired selection. (Note: The wireless adapters will automatically scan and match the wireless settings.)
Channel Width:	Allows you to select the channel width you would like to operate in. Select 20 MHz if you are not using any 802.11n wireless clients. Auto 20/40 MHz allows you to both 802.11n and non-802.11n wireless devices on your network.
Remote AP MAC Address:	Enter the MAC addresses of the APs on your network that will serve as bridges to wirelessly connect multiple networks.
Site Survey:	Click on the Scan button to search for available wireless networks, then click on the available network that you want to connect with.
Authentication:	Use the pull-down menu to choose Open System , Shared Key , or WPA-Personal . Select Open System to communicate the key across the network. Select Shared Key to limit communication to only those devices that share the same WEP settings. If multi-SSID is enabled, this option is not available. Select WPA-Personal to secure your network using a password and dynamic key changes. No RADIUS server is required.

Home > Basic Settings > Wireless > WDS mode

The screenshot shows the D-Link configuration web interface for the DAP-2590 device. The page is titled "Wireless Settings" and is set to "WDS mode". The interface includes a navigation menu on the left with options for Home, Maintenance, System, Logout, and Help. The main content area is divided into several sections:

- Wireless Settings:**
 - Wireless Band: 2.4GHz
 - Mode: WDS
 - Network Name (SSID): dlink
 - SSID Visibility: Enable
 - Auto Channel Selection: Disable
 - Channel: 6
 - Channel Width: 20 MHz
- WDS:**
 - Remote AP MAC Address: Eight input fields for MAC address (1-8).
- Site Survey:**
 - Scan button
 - Table with columns: CH, Signal, BSSID, Security, SSID.
- Authentication:**
 - Open System
- Key Settings:**
 - Encryption: Disable (selected), Enable
 - Key Type: HEX
 - Key Size: 64 Bits
 - Key Index(1~4): 1
 - Network Key: [Input field]
 - Confirm Key: [Input field]

An "Apply" button is located at the bottom right of the configuration area.

In WDS mode, the DAP-2590 wirelessly connects multiple networks, without functioning as a wireless AP.

Wireless Band: Select either **2.4 GHz** or **5 GHz** from the pull-down menu.

Mode: **WDS** is selected from the pull-down menu.

Network Name (SSID): Service Set Identifier (SSID) is the name designated for a specific wireless local area network (WLAN). The SSID's factory default setting is **dlink**. The SSID can be easily changed to connect to an existing wireless network or to establish a new wireless network.

SSID Visibility: **Enable** or **Disable** SSID visibility. Enabling this feature broadcasts the SSID across the network, thus making it visible to all network users.

Auto Channel Selection:	Enabling this feature automatically selects the channel that will provide the best wireless performance. This feature is not supported in WDS mode.
Channel:	All devices on the network must share the same channel. To change the channel, use the pull-down menu to make the desired selection.
Channel Width:	Use the pull-down menu to choose 20 MHz or Auto 20/40 MHz .
Remote AP MAC Address:	Enter the MAC addresses of the APs on your network that will serve as bridges to wirelessly connect multiple networks.
Site Survey:	Click on the Scan button to search for available wireless networks, then click on the available network that you want to connect with.
Authentication:	Use the pull-down menu to choose Open System , Shared Key , or WPA-Personal . Select Open System to communicate the key across the network. Select Shared Key to limit communication to only those devices that share the same WEP settings. Select WPA-Personal to secure your network using a password and dynamic key changes. No RADIUS server is required.

Home > Basic Settings > Wireless > Wireless Client mode

The screenshot shows the D-Link configuration web interface for the DAP-2590. The main navigation bar includes Home, Maintenance, System, Logout, and Help. A left sidebar shows a tree view with Basic Settings (Wireless, LAN), Advanced Settings, and Status. The main content area is titled 'Wireless Settings' and contains the following fields:

- Wireless Band: 2.4GHz
- Mode: Wireless Client
- Network Name (SSID): dlink
- SSID Visibility: Enable
- Auto Channel Selection: Disable
- Channel: 6
- Channel Width: 20 MHz

Below these fields is a 'Site Survey' section with a 'Scan' button and a table with columns: CH, Signal, BSSID, Security, and SSID. The table is currently empty. Below the table is an 'Authentication' section with a dropdown set to 'Open System'. Underneath is a 'Key Settings' section with radio buttons for 'Disable' (selected) and 'Enable'. Other fields include Key Type (HEX), Key Size (64 Bits), Key Index (1), Network Key, and Confirm Key. An 'Apply' button is at the bottom right.

Wireless Band: Select either **2.4 GHz** or **5 GHz** from the pull-down menu.

Mode: **Wireless Client** is selected from the pull-down menu.

Network Name (SSID): Service Set Identifier (SSID) is the name designated for a specific wireless local area network (WLAN). The SSID's factory default setting is **dlink**. The SSID can be easily changed to connect to an existing wireless network.

SSID Visibility: This option is unavailable in wireless client mode.

Auto Channel Selection: Enabling this feature automatically selects the channel that will provide the best wireless performance. This feature is not supported in Wireless Client mode.

Channel:	The channel used will be displayed, and follow the root AP.
Channel Width:	Use the pull-down menu to choose 20 MHz or Auto 20/40 MHz .
Site Survey:	Click on the Scan button to search for available wireless networks, then click on the available network that you want to connect with.
Authentication:	Use the pull-down menu to choose Open System or WPA Personal . Select Open System to communicate the key across the network. Select WPA-Personal to secure your network using a password and dynamic key changes. No RADIUS server is required.

Home > Basic Settings > Wireless > Open System or Shared Key authentication

The screenshot shows the D-Link configuration interface for the DAP-2590 device. The main content area is titled "Wireless Settings". The settings are as follows:

- Wireless Band: 2.4GHz
- Mode: Access Point
- Network Name (SSID): dlink
- SSID Visibility: Enable
- Auto Channel Selection: Enable
- Channel: 6
- Channel Width: 20 MHz
- Authentication: Open System

The "Key Settings" section is expanded and contains the following options:

- Encryption: Disable Enable
- Key Type: HEX
- Key Size: 64 Bits
- Key Index(1~4): 1
- Network Key: [Empty text box]
- Confirm Key: [Empty text box]

An "Apply" button is located at the bottom right of the configuration area.

Encryption: Use the radio button to disable or enable encryption.

Key Type*: Select **HEX** or **ASCII**.

Key Size: Select **64 Bits** or **128 Bits**.

Key Index (1~4): Select the 1st through the 4th key to be the active key.

Key: Input up to four keys for encryption. You will select one of these keys in the Key Index pull-down menu.

***Hexadecimal (HEX) digits consist of the numbers 0-9 and the letters A-F.*

**ASCII (American Standard Code for Information Interchange) is a code that represents English letters using numbers ranging from 0-127.*

Home > Basic Settings > Wireless > WPA-Personal authentication

The screenshot shows the D-Link configuration web interface for a DAP-2590 device. The top navigation bar includes 'Home', 'Maintenance', 'System', 'Logout', and 'Help'. A left sidebar shows a tree view with 'Basic Settings' expanded to 'Wireless'. The main content area is titled 'Wireless Settings' and contains the following configuration options:

- Wireless Band: 2.4GHz
- Mode: Access Point
- Network Name (SSID): dlink
- SSID Visibility: Enable
- Auto Channel Selection: Enable
- Channel: 6
- Channel Width: 20 MHz
- Authentication: WPA-Personal
- PassPhrase Settings:**
 - WPA Mode: AUTO (WPA or WPA2)
 - Cipher Type: Auto
 - Group Key Update Interval: 1800 Seconds
 - PassPhrase: [Empty text field]
 - Confirm PassPhrase: [Empty text field]

An 'Apply' button is located at the bottom right of the configuration area.

WPA Mode: When **WPA-Personal** is selected for Authentication type, you must also select a WPA mode from the pull-down menu: **AUTO (WPA or WPA2)**, **WPA2 Only**, or **WPA Only**. WPA and WPA2 use different algorithms. **AUTO (WPA or WPA2)** allows you to use both WPA and WPA2.

Cipher Type: When you select **WPA-Personal**, you must also select **AUTO**, **AES**, or **TKIP** from the pull down menu.

Group Key Update Interval: Select the interval during which the group key will be valid. The default value of **1800** is recommended.

PassPhrase: When you select **WPA-Personal**, please enter a PassPhrase in the corresponding field.

Home > Basic Settings > Wireless > WPA-Enterprise authentication

D-Link DAP-2590

Home Maintenance System Logout Help

DAP-2590

- Basic Settings
 - Wireless
 - LAN
- Advanced Settings
- Status

Wireless Settings

Wireless Band: 2.4GHz

Mode: Access Point

Network Name (SSID): dlink

SSID Visibility: Enable

Auto Channel Selection: Enable

Channel: 6

Channel Width: 20 MHz

Authentication: WPA-Enterprise

RADIUS Server Settings

WPA Mode: AUTO (WPA or WPA2)

Cipher Type: Auto Group Key Update Interval: 1800 Seconds

Network Access Protection

Network Access Protection: Disable Enable

Primary RADIUS Server Setting

RADIUS Server: [] RADIUS Port: 1812

RADIUS Secret: []

Backup RADIUS Server Setting (Optional)

RADIUS Server: [] RADIUS Port: 1812

RADIUS Secret: []

Primary Accounting Server Setting

Accounting Mode: Disable

Accounting Server: [] Accounting Port: 1813

Accounting Secret: []

Backup Accounting Server Setting (Optional)

Accounting Server: [] Accounting Port: 1813

Accounting Secret: []

Apply

WPA Mode: When **WPA-Enterprise** is selected, you must also select a WPA mode from the pull-down menu: **AUTO (WPA or WPA2)**, **WPA2 Only**, or **WPA Only**. WPA and WPA2 use different algorithms. **AUTO (WPA or WPA2)** allows you to use both WPA and WPA2.

Cipher Type: When WPA-Enterprise is selected, you must also select a cipher type from the pull-down menu: **Auto**, **AES**, or **TKIP**.

Group Key Update Interval: Select the interval during which the group key will be valid. **1800** is the recommended value as a lower interval may reduce data transfer rates.

Network Access Protection:	Enable or disable Microsoft Network Access Protection.
RADIUS Server:	Enter the IP address of the RADIUS server.
RADIUS Port:	Enter the RADIUS port.
RADIUS Secret:	Enter the RADIUS secret.
Accounting Mode:	Select if you want to use a different server for accounting.
Accounting Server:	Enter the IP address of the Accounting server.
Accounting Port:	Enter the Accounting port (1813 is the default).
Accounting Secret:	Enter the Accounting secret.

Note: You can input the secondary RADIUS server and accounting server settings if you have a backup RADIUS and accounting server.

Home > Basic Settings > LAN

The screenshot shows the D-Link configuration web interface for a DAP-2590 device. The top navigation bar includes 'Home', 'Maintenance', 'System', 'Logout', and 'Help'. The left sidebar shows a tree view with 'DAP-2590' expanded to 'Basic Settings', which includes 'Wireless', 'LAN', 'Advanced Settings', and 'Status'. The main content area is titled 'LAN Settings' and contains the following fields:

- Get IP From:** A dropdown menu set to 'Static IP (Manual)'.
- IP Address:** A text input field containing '192.168.0.50'.
- Subnet Mask:** A text input field containing '255.255.255.0'.
- Default Gateway:** An empty text input field.

An 'Apply' button is located at the bottom right of the configuration area.

LAN is short for Local Area Network. This is considered your internal network. These are the IP settings of the LAN interface for the DAP-2590. These settings may be referred to as private settings. You may change the LAN IP address if needed. The LAN IP address is private to your internal network and cannot be seen on the Internet.

Get IP From: **Static IP (Manual)** is chosen here. Choose this option if you do not have a DHCP server in your network, or if you wish to assign a static IP address to the DAP-2590. When **Dynamic IP (DHCP)** is selected, the other fields here will be grayed out. Please allow about 2 minutes for the DHCP client to be functional once this selection is made.

IP Address: The default IP address is 192.168.0.50. Assign a static IP address that is within the IP address range of your network.

Subnet Mask: Enter the subnet mask. All devices in the network must share the same subnet mask.

Default Gateway: Enter the IP address of the gateway in your network. If there is a gateway in your network, please enter an IP address within the range of your network.

Home > Advanced Settings > Performance

The screenshot displays the D-Link DAP-2590 configuration interface. The left sidebar shows a tree view with 'Advanced Settings' expanded to 'Performance'. The main content area is titled 'Performance Settings' and contains the following configuration options:

- Wireless: On (dropdown)
- Wireless Mode: Mixed 802.11n, 802.11g and 802.11b (dropdown)
- Data Rate: Best (Up to 300) (dropdown) (Mbps)
- Beacon Interval (25-500): 100 (text input)
- DTIM Interval (1-15): 1 (text input)
- Transmit Power: 100% (dropdown)
- WMM (Wi-Fi Multimedia): Enable (dropdown)
- Ack Time Out (2.4GHz, 48~200): 48 (text input) (μs)
- Short GI: Enable (dropdown)
- IGMP Snooping: Disable (dropdown)
- Link Integrity: Disable (dropdown)
- Connection Limit: Disable (dropdown)
- User Limit (0 - 64): 20 (text input)
- Network Utilization: (dropdown)

An 'Apply' button is located at the bottom right of the configuration area.

Wireless: Use the pull-down menu to turn the wireless function **On** or **Off**.

Wireless Mode: The different combination of clients that can be supported include **Mixed 802.11n, 802.11g and 802.11b** and **Mixed 802.11g and 802.11b** in the 2.4 GHz band and **Mixed 802.11n, 802.11a and 802.11a only** in the 5 GHz band. Please note that when backwards compatibility is enabled for legacy (802.11a/g/b) clients, degradation of 802.11n (draft) wireless performance is expected.

Data Rate*: Indicate the base transfer rate of wireless adapters on the wireless LAN. The AP will adjust the base transfer rate depending on the base rate of the connected device. If there are obstacles or interference, the AP will step down the rate. This option is enabled in **Mixed 802.11g and 802.11b** mode (for 2.4 GHz) and **802.11a only** mode (for 5 GHz). The choices available are **Best (Up to 54)**, **54**, **48**, **36**, **24**, **18**, **12**, **9**, **6** for 5 GHz and **Best (Up to 54)**, **54**, **48**, **36**, **24**, **18**, **12**, **9**, **6**, **11**, **5.5**, **2** or **1** for 2.4 GHz.

* Maximum wireless signal rate derived from IEEE Standard 802.11g, 802.11a and Draft 802.11n specifications. Actual data throughput will vary. Network conditions and environmental factors, including volume of network traffic, building materials and construction, and network overhead, lower actual data throughput rate. Environmental conditions will adversely affect wireless signal range.

Beacon Interval (25-500):	Beacons are packets sent by an access point to synchronize a wireless network. Specify a value in milliseconds. The default (100) is recommended. Setting a higher beacon interval can help to save the power of wireless clients, while setting a lower one can help a wireless client connect to an access point faster.
DTIM Interval (1-15):	Select a Delivery Traffic Indication Message setting between 1 and 15 . 1 is the default setting. DTIM is a countdown informing clients of the next window for listening to broadcast and multicast messages.
Transmit Power:	This setting determines the power level of the wireless transmission. Transmitting power can be adjusted to eliminate overlapping of wireless area coverage between two access points where interference is a major concern. For example, if wireless coverage is intended for half of the area, then select 50% as the option. Use the pull-down menu to select 100% , 50% , 25% , or 12.5% .
WMM (Wi-Fi Multimedia):	WMM stands for Wi-Fi Multimedia. Enabling this feature will improve the user experience for audio and video applications over a Wi-Fi network.
Ack Time Out (2.4 GHZ, 48~200) or Ack Time Out (5 GHZ, 25~200):	To effectively optimize throughput over long distance links enter a value for Acknowledgement Time Out between 25 and 200 microseconds for 5 GHz or from 48 to 200 microseconds in the 2.4 GHz in the field provided.
Short GI:	Select Enable or Disable . Enabling a short guard interval can increase throughput. However, be aware that it can also increase the error rate in some installations due to increased sensitivity to radio-frequency installations.
IGMP Snooping:	Select Enable or Disable . Internet Group Management Protocol allows the AP to recognize IGMP queries and reports sent between routers and an IGMP host (wireless STA). When IGMP snooping is enabled, the AP will forward multicast packets to an IGMP host based on IGMP messages passing through the AP.
Link Integrity:	Select Enable or Disable . If the Ethernet connection between the LAN and the AP is disconnected, enabling this feature will cause the wireless segment associated with the AP to be disassociated from the AP.

- Connection Limit:** Select **Enable** or **Disable**. This is an option for load balancing. This determines whether to limit the number of users accessing this device. The exact number is entered in the User Limit field below. This feature allows the user to share the wireless network traffic and the client using multiple APs. If this function is enabled, when the number of users exceeds this value or the network utilization of this AP exceeds the percentage that has been specified, the DAP-2590 will not allow clients to associate with the AP.
- User Limit (0 - 64):** Set the maximum amount of users that are allowed access (**0-64** users). To use this feature, the Connection Limit above must be enabled. For most users, a limit of **10** is recommended. The default setting is **20**.
- Network Utilization:** Set the maximum utilization of this access point for service. The DAP-2590 will not allow any new clients to associate with the AP if the utilization exceeds the value the user specifies. Select a utilization percentage between **100%**, **80%**, **60%**, **40%**, **20%**, or **0%**. When this network utilization threshold is reached, the device will pause one minute to allow network congestion to dissipate.

Home > Advanced Settings > Multi-SSID

The screenshot shows the D-Link configuration interface for the DAP-2590. The left sidebar contains a tree view with categories like Basic Settings, Advanced Settings, Performance, Multi-SSID, VLAN, Intrusion, Schedule, QoS, DHCP Server, Filters, and Status. The main content area is titled 'Multi-SSID Settings' and features a checkbox for 'Enable Multi-SSID'. Under 'Wireless Settings', there are fields for Band (2.4 GHz), Index (Primary SSID), SSID (dlink), SSID Visibility (Enable), Security (Open System), and WMM (Wi-Fi Multimedia) (Enable). The 'Key Settings' section includes radio buttons for Encryption (Disable/Enable), a Key Type dropdown (HEX), Key Size (64 Bits), Key Index (1), and input fields for Key and Confirm Key. An 'Add' button is located below the key settings. At the bottom, a table lists the configured SSIDs:

Index	SSID	Band	Encryption	Delete
Primary SSID	dlink	2.4 GHz	None	

An 'Apply' button is located at the bottom right of the configuration area.

The device supports up to eight multiple Service Set Identifiers. You can set the Primary SSID in the **Basic > Wireless** section. The SSID's factory default setting is **dlink**. The SSID can be easily changed to connect to an existing wireless network or to establish a new wireless network.

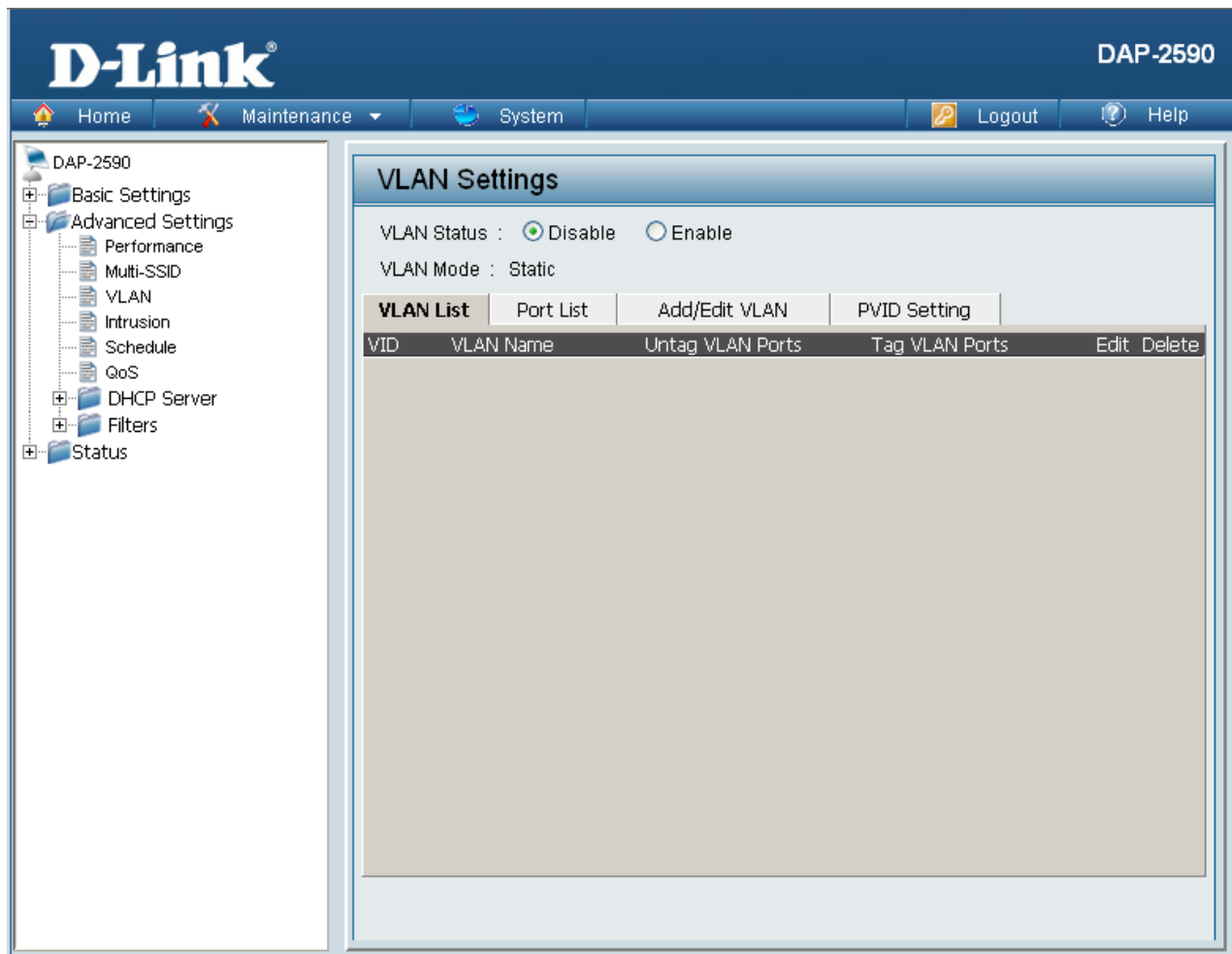
- Enable Multi-SSID:** Check to enable support for multiple SSIDs.
- Band:** This read-only value is the current band setting.
- Index:** You can select up to seven multi-SSIDs. With the Primary SSID, you have a total of eight multi-SSIDs.
- SSID:** Service Set Identifier (SSID) is the name designated for a specific wireless local area network (WLAN). The SSID's factory default setting is **dlink**. The SSID can be easily changed to connect to an existing wireless network or to establish a new wireless network.

SSID Visibility:	Enable or Disable SSID visibility. Enabling this feature broadcasts the SSID across the network, thus making it visible to all network users.
Security:	The Multi-SSID security can be Open System , WPA-Personal , or WPA-Enterprise . For a detailed description of the Open System parameters please go to page 23. For a detailed description of the WPA-Personal parameters please go to page 24. For a detailed description of the WPA-Enterprise parameters please go to pages 25-26.
WMM:	Select Enable or Disable .
Encryption:	When you select Open System , toggle between Enable and Disable . If Enable is selected, the Key Type, Key Size, Key Index (1~4), Key, and Confirm Keys must also be configured.
Key Type:	Select HEX or ASCII .
Key Size:	Select 64 Bits or 128 Bits .
Key Index (1~4):	Select from the 1st to 4th key to be set as the active key.
Key:	Input up to four keys for encryption. You will select one of these keys in the Key Index pull-down menu.
WPA Mode:	When you select either WPA-Personal or WPA-Enterprise , you must also choose a WPA mode from the pull-down menu: AUTO (WPA or WPA2) , WPA2 Only , or WPA Only . WPA and WPA2 use different algorithms. AUTO (WPA or WPA2) allows you to use both WPA and WPA2. In addition, you must configure Cipher Type, and Group Key Update Interval.
Cipher Type:	Select Auto , AES , or TKIP from the pull-down menu.
Group Key Update Interval:	Select the interval during which the group key will be valid. The default value of 1800 seconds is recommended.
PassPhrase:	When you select WPA-Personal , please enter a PassPhrase in the corresponding field.
Confirm PassPhrase:	When you select WPA-Personal , please re-enter the PassPhrase entered in the previous item in the corresponding field.
RADIUS Server:	When you select WPA-Enterprise , enter the IP address of the RADIUS server. In addition, you must configure RADIUS Port and RADIUS Secret.
RADIUS Port:	Enter the RADIUS port.

RADIUS Secret:	Enter the RADIUS secret.
Accounting Mode:	When you select WPA-Enterprise , this option allows you to use a different server for accounting. In addition, you must configure Accounting Server, Accounting Port, and Accounting Secret.
Accounting Server:	Enter the IP address of the Accounting server.
Accounting Port:	Enter the Accounting port (1813 is the default).
Accounting Secret:	Enter the Accounting secret.

Note: You can input the secondary RADIUS server and accounting server settings if you have a backup RADIUS and accounting server.

Home > Advanced Settings > VLAN > VLAN List



The DAP-2590 supports VLANs. VLANs can be created with a Name and VID. Mgmt (TCP stack), LAN, Primary/Multiple SSID, and WDS connection can be assigned to VLANs as they are physical ports. Any packet which enters the DAP-2590 without a VLAN tag will have a VLAN tag inserted with a PVID.

The VLAN List tab displays the current VLANs.

VLAN Status: Use the radio button to toggle to Enable. Next, go to the **Add/Edit VLAN** tab to add or modify an item on the **VLAN List** tab.

Home > Advanced Settings > VLAN > Port List

The screenshot shows the D-Link DAP-2590 web interface. The top navigation bar includes 'Home', 'Maintenance', 'System', 'Logout', and 'Help'. The left sidebar shows a tree view with 'DAP-2590' expanded to 'Advanced Settings' > 'VLAN'. The main content area is titled 'VLAN Settings' and includes:

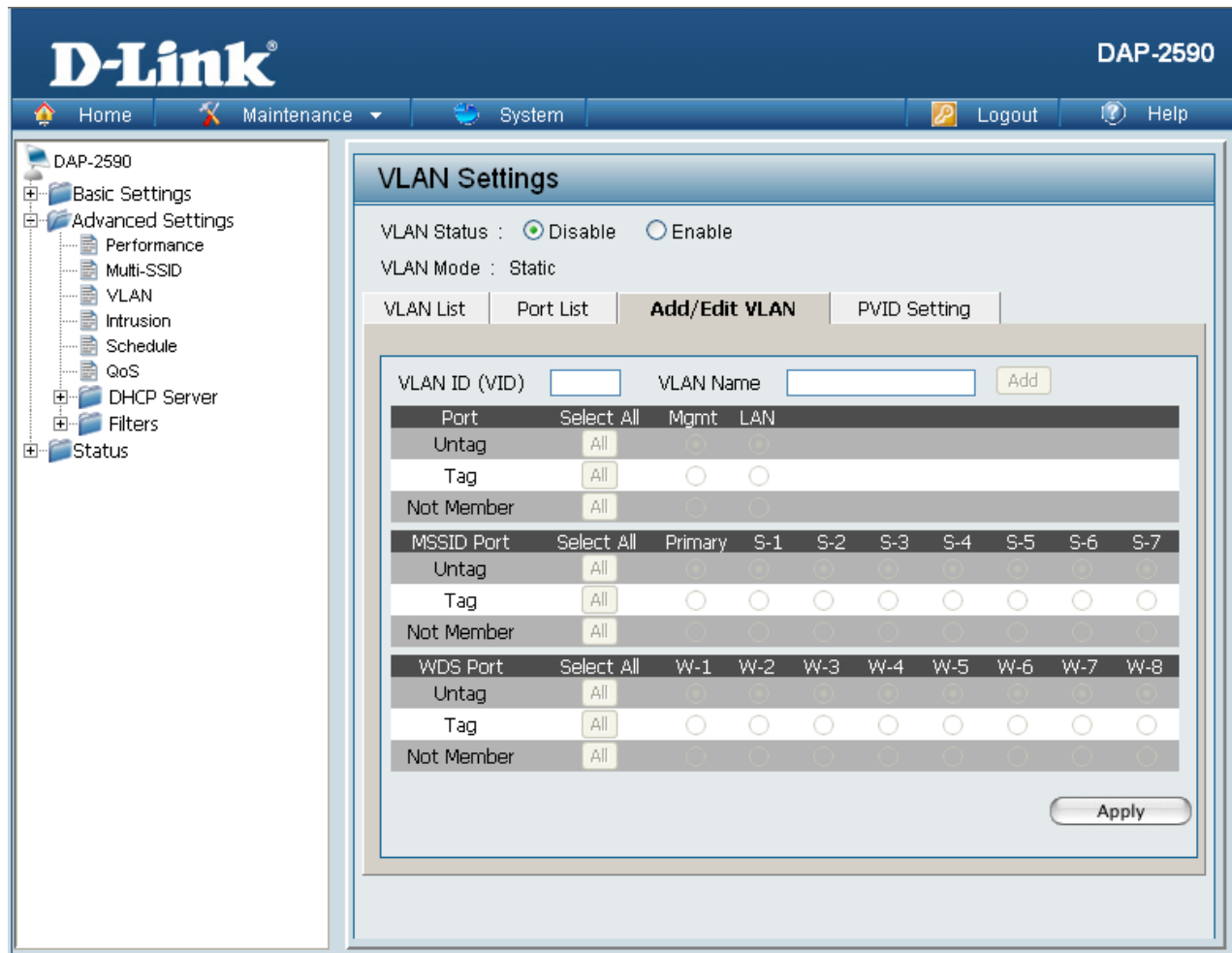
- VLAN Status: Disable Enable
- VLAN Mode: Static
- Navigation tabs: VLAN List, **Port List**, Add/Edit VLAN, PVID Setting
- A table with columns: Port Name, Tag VID, Untag VID, and PVID.

Port Name	Tag VID	Untag VID	PVID
Mgmt			1
LAN			1
dlink			1
dlink1			1
dlink2			1
dlink3			1
dlink4			1
dlink5			1
dlink6			1
dlink7			1
W-1			1
W-2			1
W-3			1
W-4			1
W-5			1
W-6			1
W-7			1
W-8			1

The Port List tab displays the current ports. If you want to configure the guest and internal networks on a Virtual LAN (VLAN), the switch and DHCP server you are using must also support VLANs. As a prerequisite step, configure a port on the switch for handling VLAN tagged packets as described in the IEEE 802.1Q standard.

- VLAN Status:** Use the radio button to toggle to Enable. Next, go to the **Add/Edit VLAN** tab to add or modify an item on the **VLAN List** tab.
- Port Name:** The name of the port is displayed in this column.
- Tag VID:** The Tagged VID is displayed in this column.
- Untag VID:** The Untagged VID is displayed in this column.
- PVID:** The Port VLAN Identifier is displayed in this column.

Home > Advanced Settings > VLAN > Add/Edit VLAN



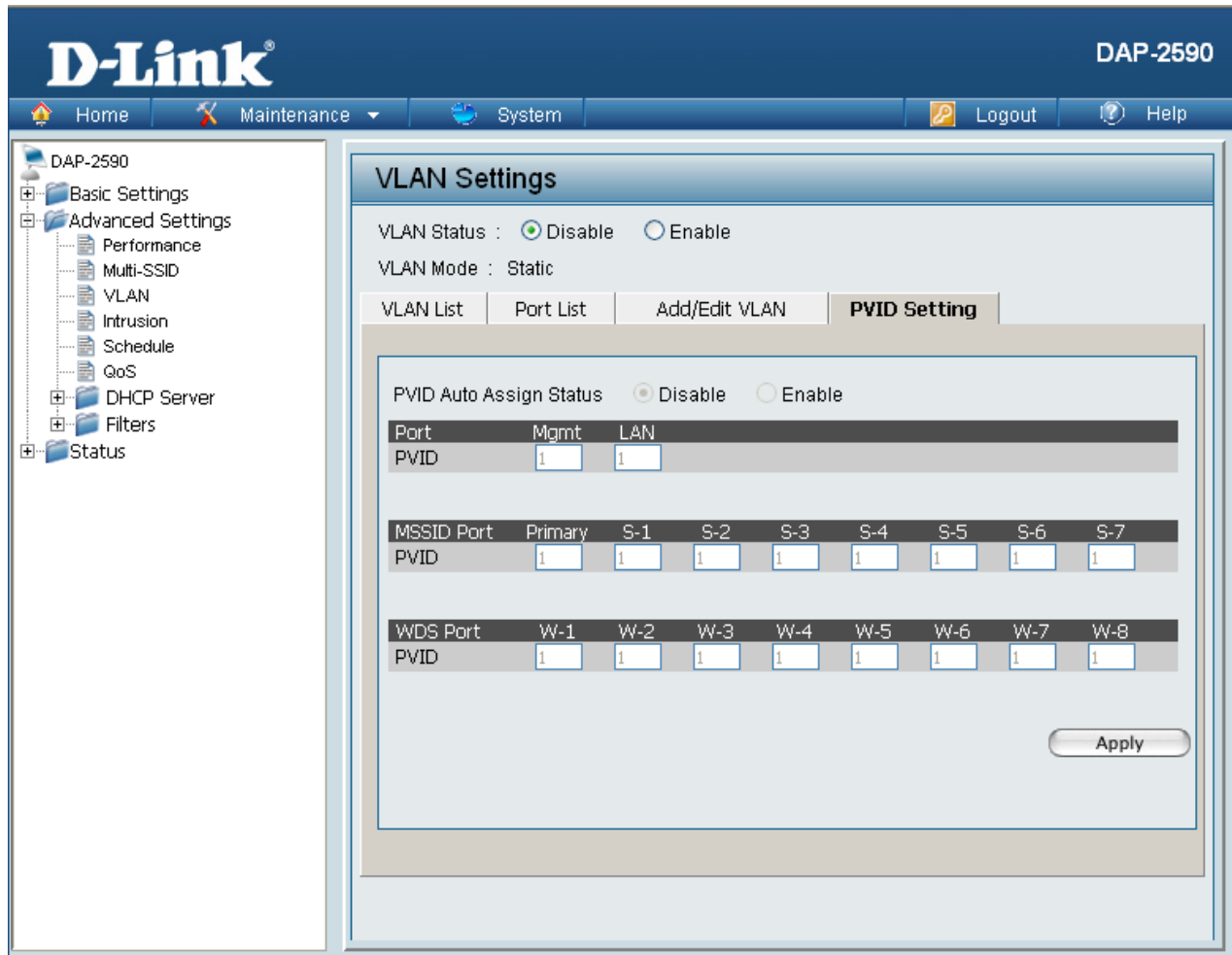
The **Add/Edit VLAN** tab is used to configure VLANs. Once you have made the desired changes, click the **Apply** button to let your changes take effect.

VLAN Status: Use the radio button to toggle to Enable.

VLAN ID (VID): Provide a number between **1** and **4094** for the Internal VLAN.

VLAN Name: Enter the VLAN to add or modify.

Home > Advanced Settings > VLAN > PVID Setting

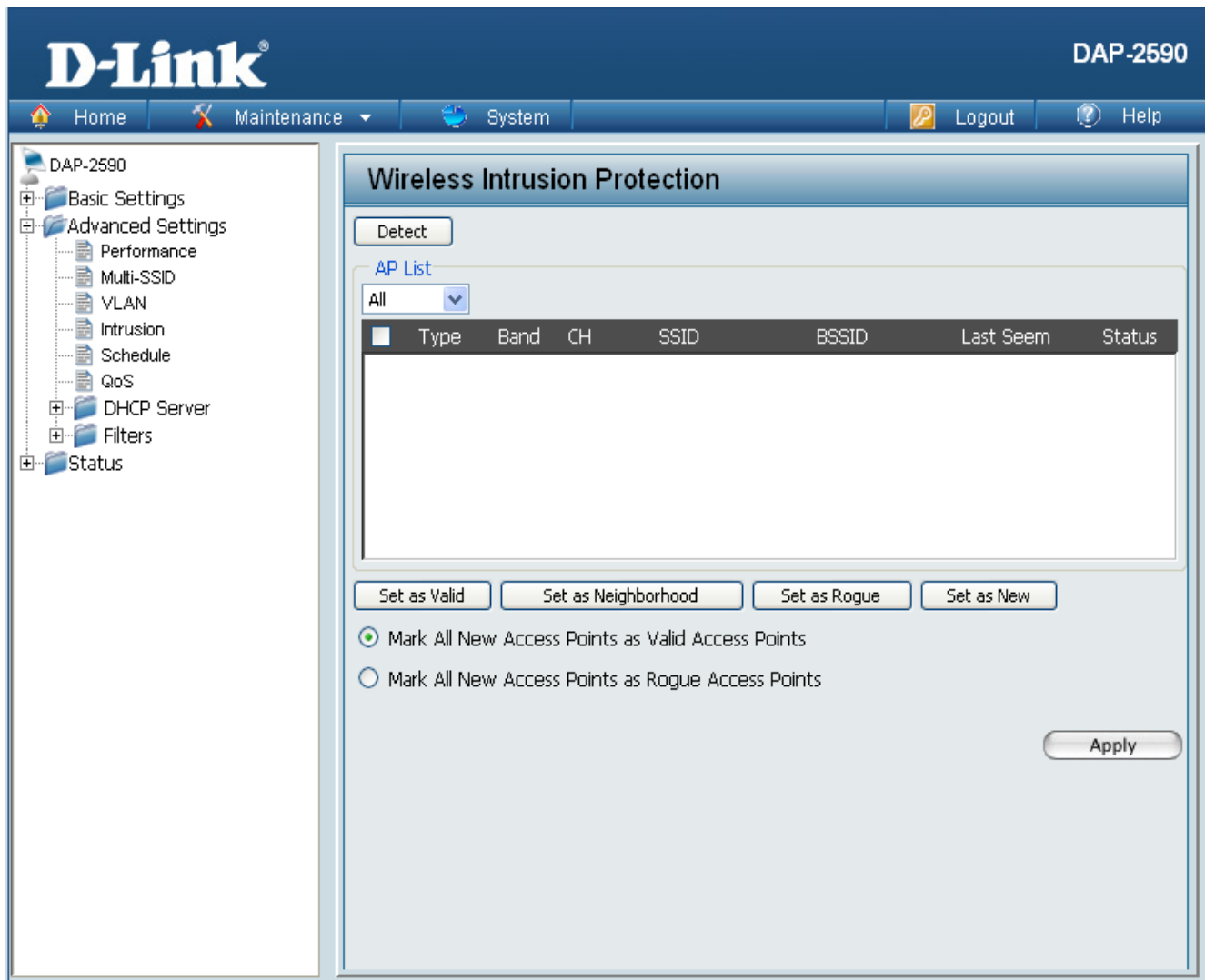


The **PVID Setting** tab is used to enable/disable the Port VLAN Identifier Auto Assign Status as well as to configure various types of PVID settings. Click the **Apply** button to let your changes take effect.

VLAN Status: Use the radio button to toggle to Enable.

PVID Auto Assign Status: Use the radio button to toggle PVID auto assign status to Enable.

Home > Advanced Settings > Intrusion



The Wireless Intrusion Protection window is used to set APs as **All**, **Valid**, **Neighborhood**, **Rogue**, and **New**. Click the **Apply** button to let your changes take effect.

AP List: The choices include **All**, **Valid**, **Neighbor**, **Rogue**, and **New**.

Detect Click this button to initiate a scan of the network.

Home > Advanced Settings > Schedule

The Wireless Schedule Settings window is used to add and modify scheduling rules on the device. Click the **Apply** button to let your changes take effect.

Wireless Schedule: Use the pull-down menu to enable the device's scheduling feature.

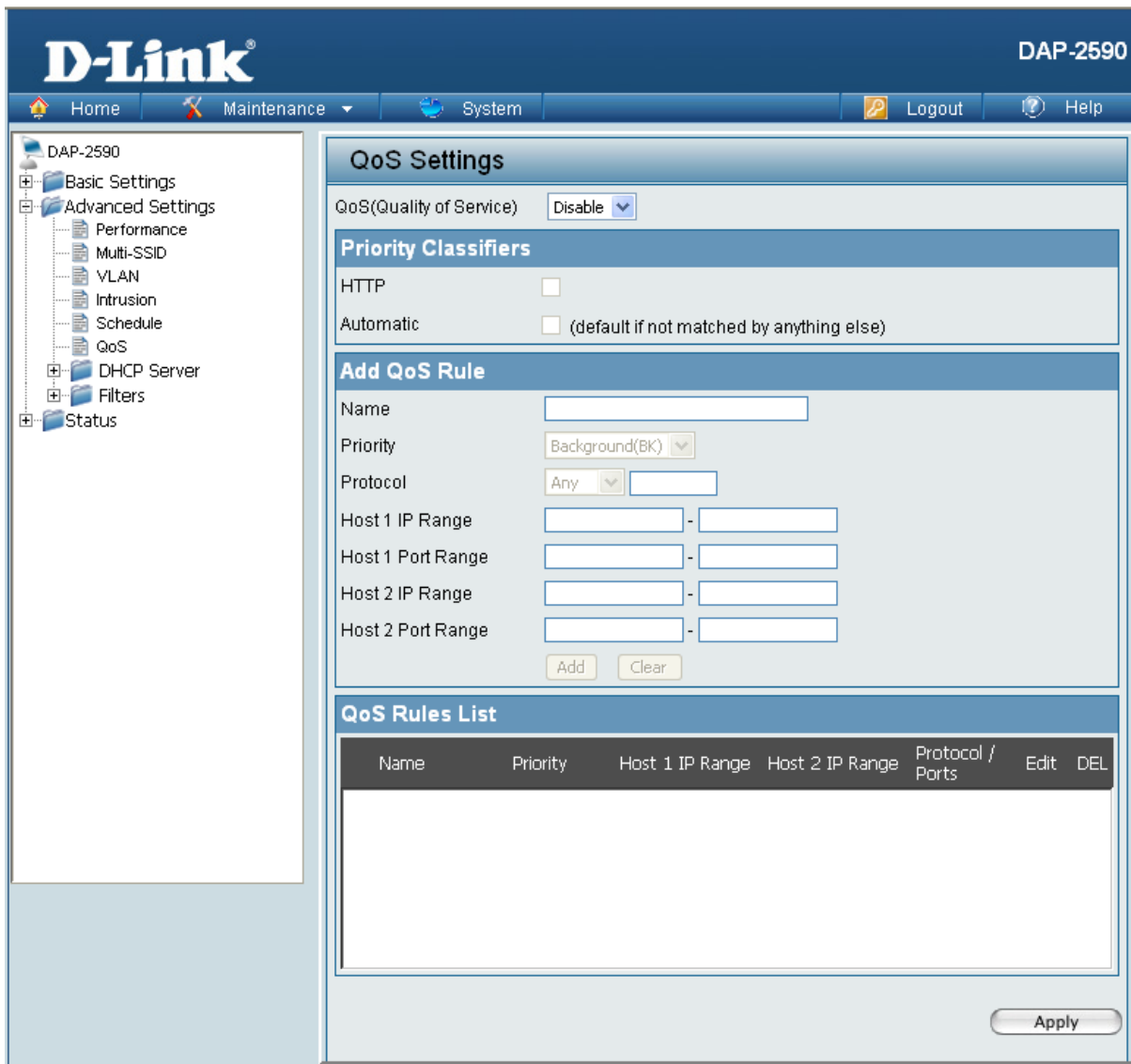
Name: Enter a name for the new scheduling rule in the field provided.

Day(s): Toggle the radio button between All Week and Select Days(s). If the second option is selected, check the specific days you want the rule to be effective on.

All Days(s): Check this box to have your settings apply 24 hours a day.

Wireless: Toggle the pull-down menu between **Off** and **On**.

Home > Advanced Settings > QoS



Quality of Service (QoS) enhances the experience of using a network by prioritizing the traffic of different applications.

A QoS Rule identifies a specific message flow and assigns a priority to that flow. For most applications, the priority classifiers ensure the right priorities and specific QoS Rules are not required.

QoS supports overlaps between rules. If more than one rule matches a specific message flow, the rule with the highest priority will be used.

QoS (Quality of Service): Enable this option if you want to allow QoS to prioritize your traffic Priority Classifiers.

HTTP: Allows the access point to recognize HTTP transfers for many common audio and video streams and prioritize them above other traffic. Such streams are frequently used by digital media players.

Automatic:	When enabled, this option causes the access point to automatically attempt to prioritize traffic streams that it doesn't otherwise recognize, based on the behavior that the streams exhibit. This acts to de-prioritize streams that exhibit bulk transfer characteristics, such as file transfers, while leaving interactive traffic, such as gaming or VoIP, running at a normal priority
Name:	Enter a name for the new QoS rule in the field provided.
Priority:	Use the pull-down menu to select the desired priority: Background (BK) , Best Effort (BE) , Video (VI) , or Voice (VO) .
Protocol:	Use the pull-down menu to choose the appropriate protocol used by the messages: Any , TCP , UDP , Both , IMCP , or Other .
Host 1 IP Range:	The rule applies to a flow of messages for which one computer's IP address falls within the range set here.
Host 1 Port Range:	The rule applies to a flow of messages for which host 1's port number is within the range set here when the Protocol is set to TCP , UDP , or Both .
Host 2 IP Range:	The rule applies to a flow of messages for which the other computer's IP address falls within the range set here.
Host 2 Port Range:	The rule applies to a flow of messages for which host 2's port number is within the range set here when the Protocol is set to TCP , UDP , or Both .

Home > Advanced Settings > DHCP Server > Dynamic Pool Settings

The screenshot shows the D-Link DAP-2590 configuration interface. The main content area is titled "Dynamic Pool Settings" and contains the following fields:

- DHCP Server Control**
 - Function Enable/Disable: (dropdown menu)
- Dynamic Pool Settings**
 - IP Assigned From:
 - The Range of Pool (1-254):
 - SubMask:
 - Gateway:
 - WINS:
 - DNS:
 - Domain Name:
 - Lease Time (60 - 31536000 sec):

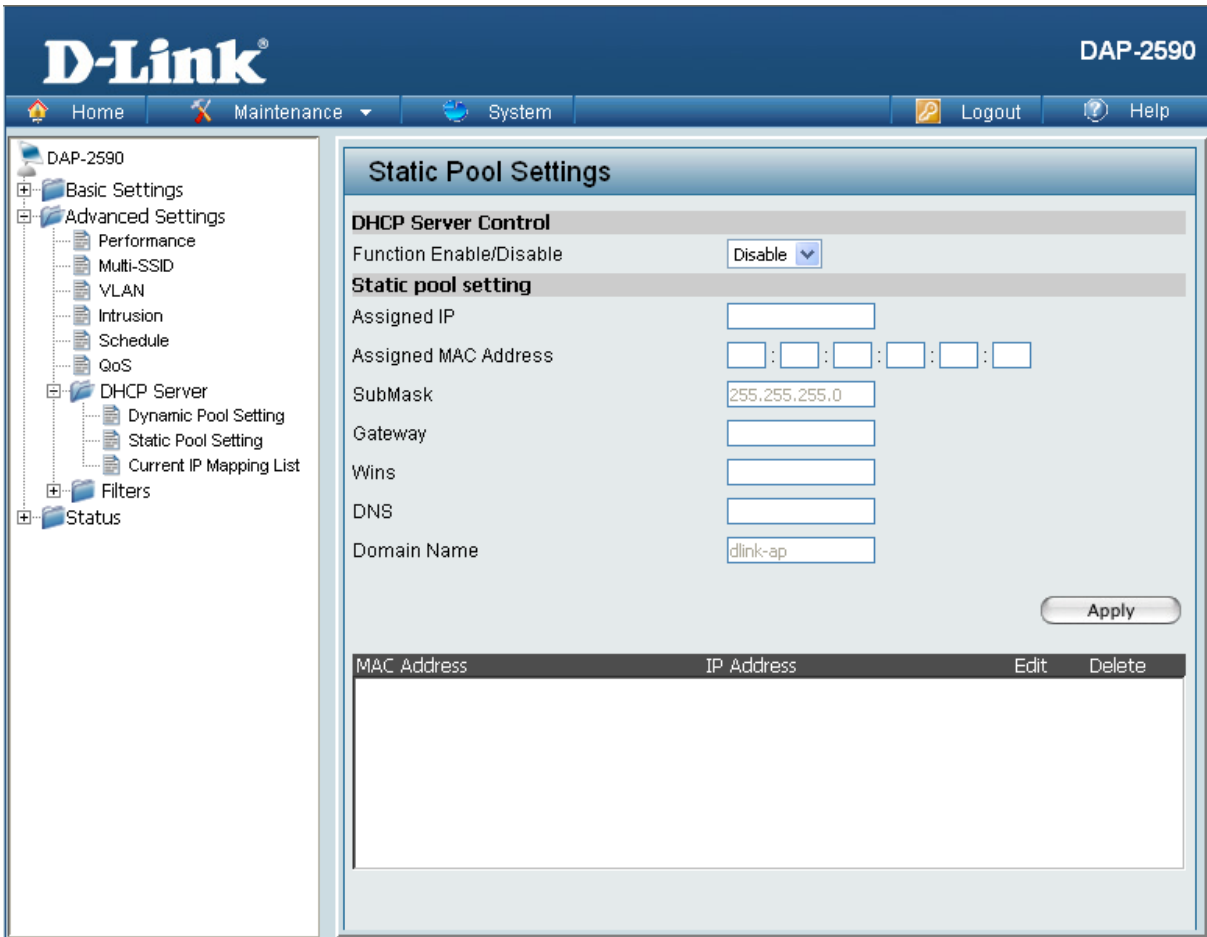
An "Apply" button is located at the bottom right of the configuration area.

The DHCP address pool defines the range of the IP address that can be assigned to stations in the network. A Dynamic Pool allows wireless stations to receive an available IP with lease time control.

Function Enable/Disable:	Dynamic Host Configuration Protocol (DHCP) assigns dynamic IP addresses to devices on the network. This protocol simplifies network management and allows new wireless devices to receive IP addresses automatically without the need to manually assign new IP addresses. Select Enable to allow the DAP-2590 to function as a DHCP server.
IP Assigned From:	Input the first IP address available for assignment on your network.
The Range of Pool (1-254):	Enter the number of IP addresses available for assignment. IP addresses are increments of the IP address specified in the "IP Assigned From" field.
SubMask:	All devices in the network must have the same subnet mask to communicate. Enter the submask for the network here.

Gateway:	Enter the IP address of the gateway on the network.
WINS:	Specify the Windows Internet Naming Service (WINS) server address for the wireless network. WINS is a system that determines the IP address of a network computer that has a dynamically assigned IP address.
DNS:	Enter the IP address of the Domain Name System (DNS) server. The DNS server translates domain names such as www.dlink.com into IP addresses.
Domain Name:	Enter the domain name of the network, if applicable. (An example of a domain name is: www.dlink.com.)
Lease Time (60-31536000 sec):	The lease time is the period of time before the DHCP server will assign new IP addresses.

Home > Advanced Settings > DHCP Server > Static Pool Setting



The DHCP address pool defines the range of IP addresses that can be assigned to stations on the network. A static pool allows specific wireless stations to receive a fixed IP without time control.

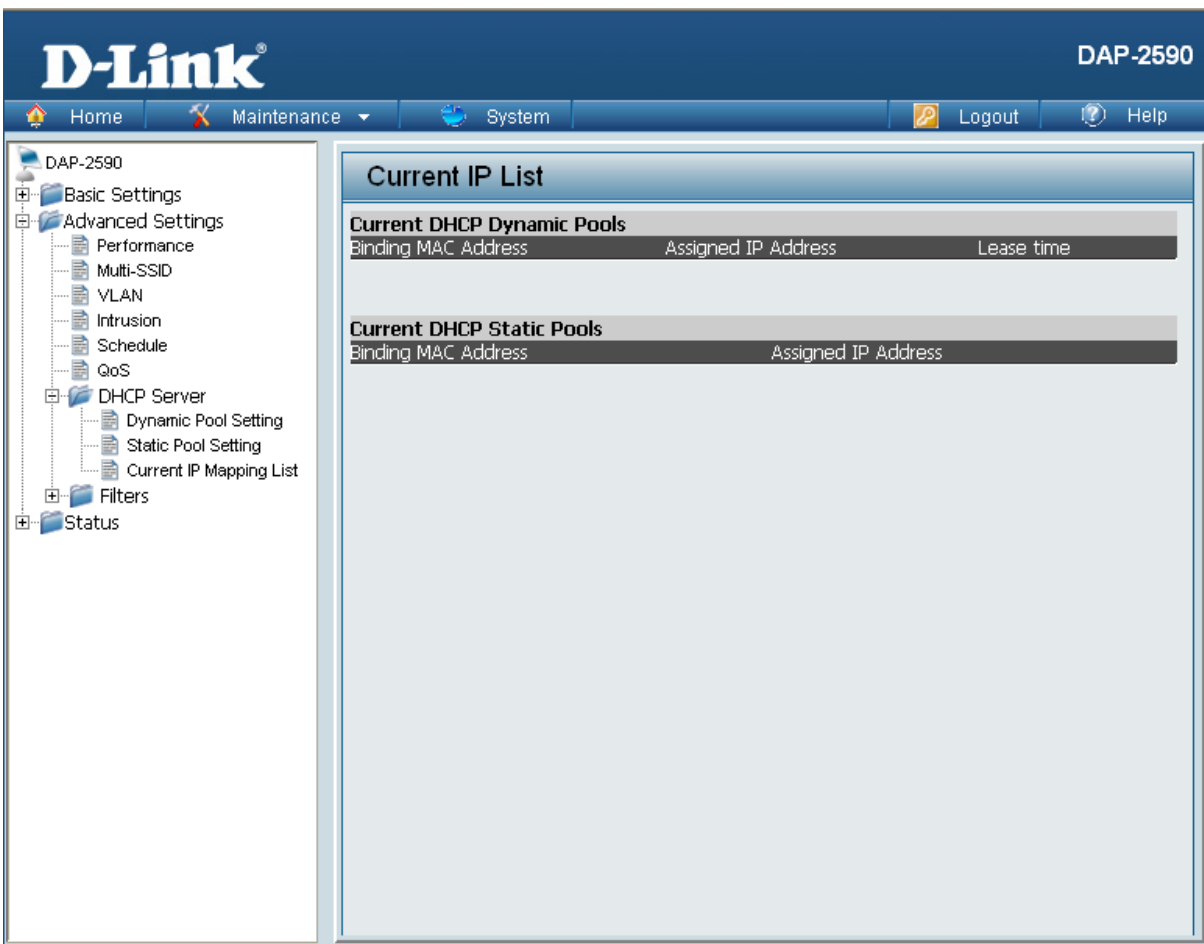
Function Enable/Disable: Dynamic Host Configuration Protocol (DHCP) assigns IP addresses to wireless devices on the network. This protocol simplifies network management and allows new wireless devices to receive IP addresses automatically without the need to manually assign IP addresses. Select **Enable** to allow the DAP-2590 to function as a DHCP server.

Assigned IP: Use the Static Pool Settings to assign the same IP address to a device every time you start up. The IP addresses assigned in the Static Pool list must NOT be in the same IP range as the Dynamic Pool. After you have assigned a static IP address to a device via its MAC address, click **Apply**; the device will appear in the Assigned Static Pool at the bottom of the screen. You can edit or delete the device in this list.

Assigned MAC Address: Enter the MAC address of the device requesting association here.

SubMask:	Define the submask of the IP address specified in the "IP Assigned From" field.
Gateway:	Specify the Gateway address for the wireless network.
WINS:	Specify the Windows Internet Naming Service (WINS) server address for the wireless network. WINS is a system that determines the IP address of a network computer with a dynamically assigned IP address, if applicable.
DNS:	Enter the Domain Name System (DNS) server address for the wireless network. The DNS server translates domain names such as www.dlink.com into IP addresses.
Domain Name:	Specify the domain name for the network.

Home > Advanced Settings > DHCP Server > Current IP Mapping List



This window displays information about the current assigned DHCP dynamic and static IP address pools. This information is available when you enable DHCP server on the AP and assign dynamic and static IP address pools.

Current DHCP Dynamic Pools: These are IP address pools the DHCP server has assigned using the dynamic pool setting.

Binding MAC Address: The MAC address of a device on the network that is assigned an IP address from the DHCP dynamic pool.

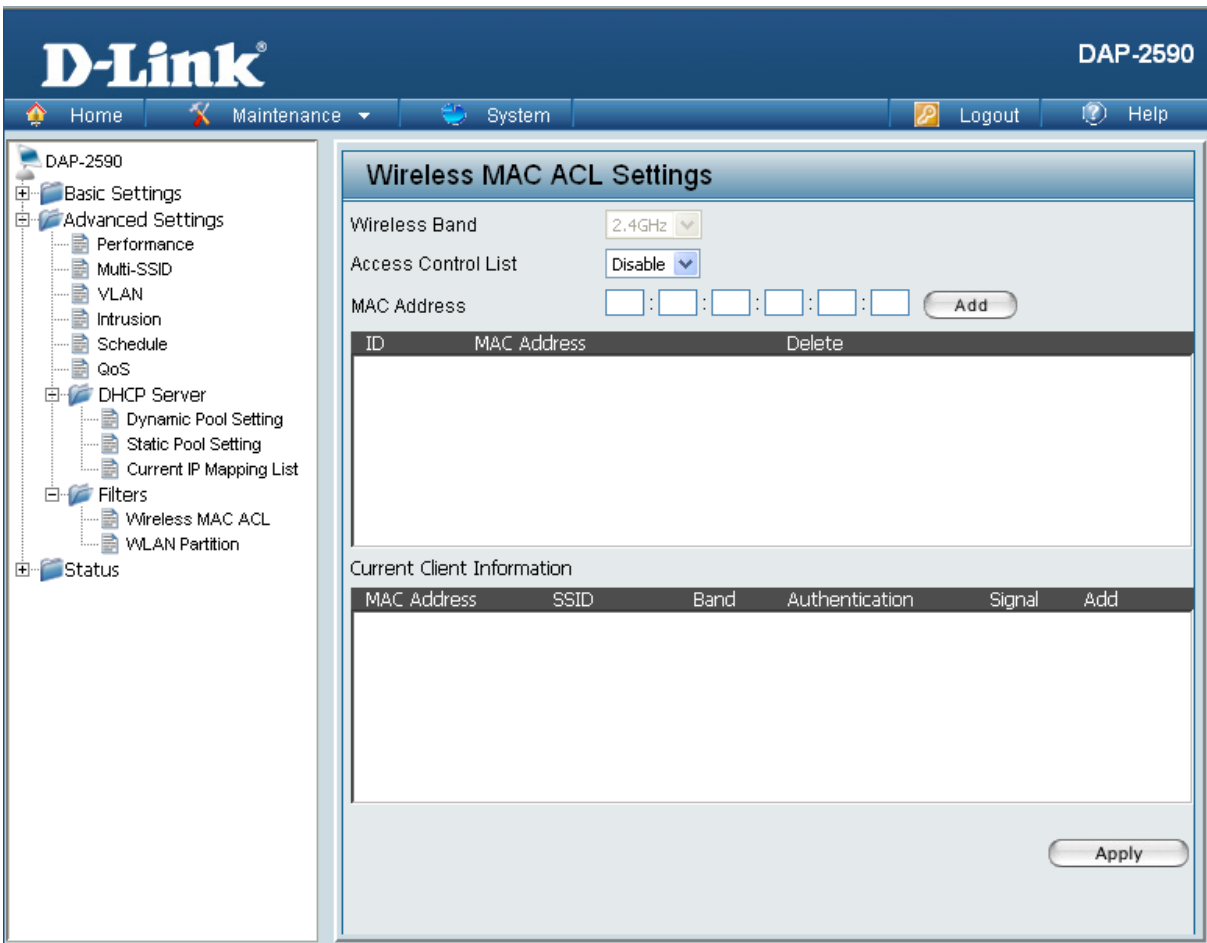
Assigned IP Address: The current corresponding DHCP-assigned IP address of the device.

Lease Time: The length of time that the dynamic IP address will be valid.

Current DHCP Static Pools: These are the IP address pools of the DHCP server assigned through the static pool settings.

- Binding MAC Address:** The MAC address of a device on the network that is assigned an IP address from the DHCP dynamic pool.
- Assigned IP Address:** The current corresponding DHCP-assigned static IP address of the device.

Home > Advanced Settings > Filters > Wireless MAC ACL



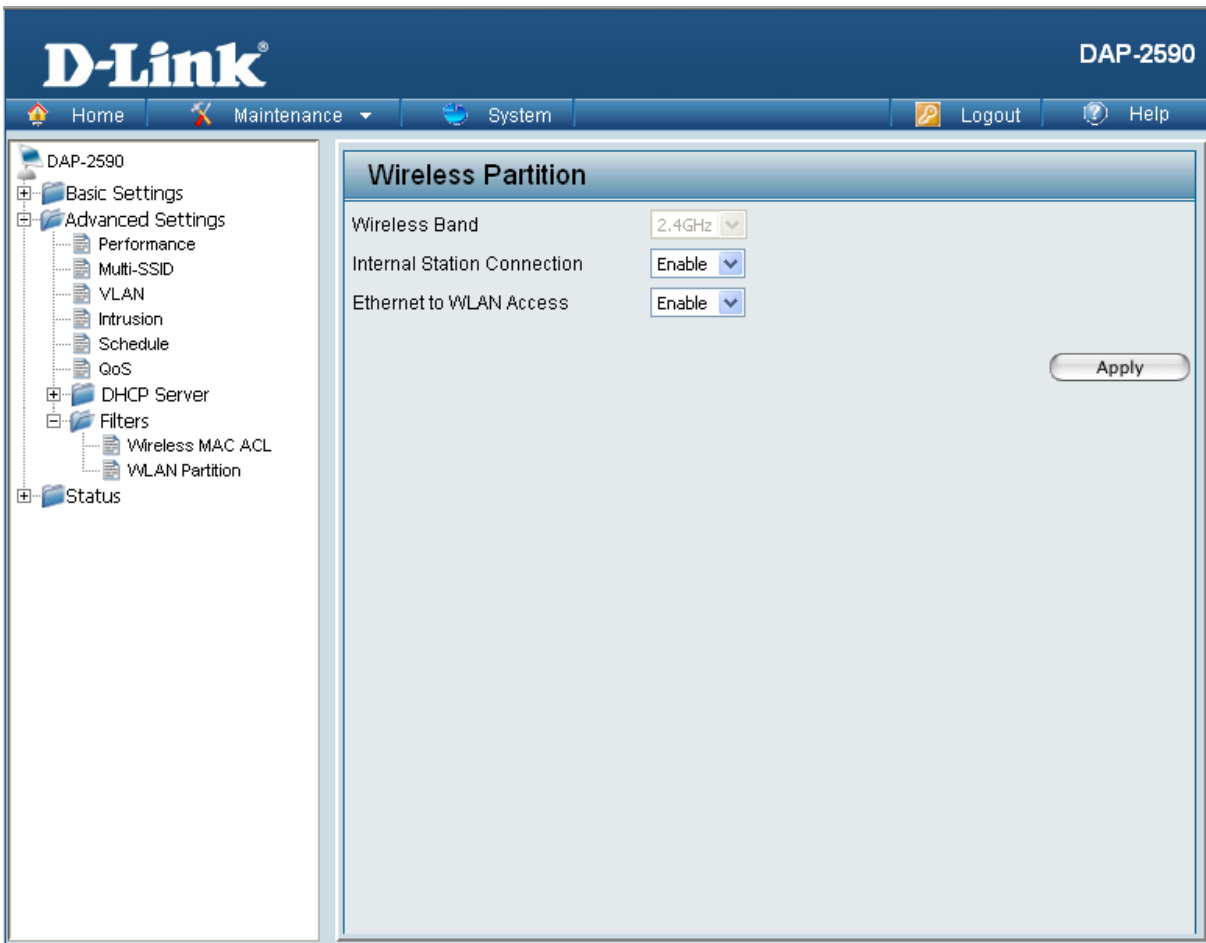
Wireless Band: Displays the current wireless band rate.

Access Control List: Select **Disable** to disable the filters function.
 Select **Accept** to accept only those devices with MAC addresses in the Access Control List. All other devices not on the list will be rejected.
 Select **Reject** to reject the devices with MAC addresses on the Access Control List. All other devices not on the list will be accepted.

MAC Address: Enter each MAC address that you wish to include in your filter list, and click **Apply**.

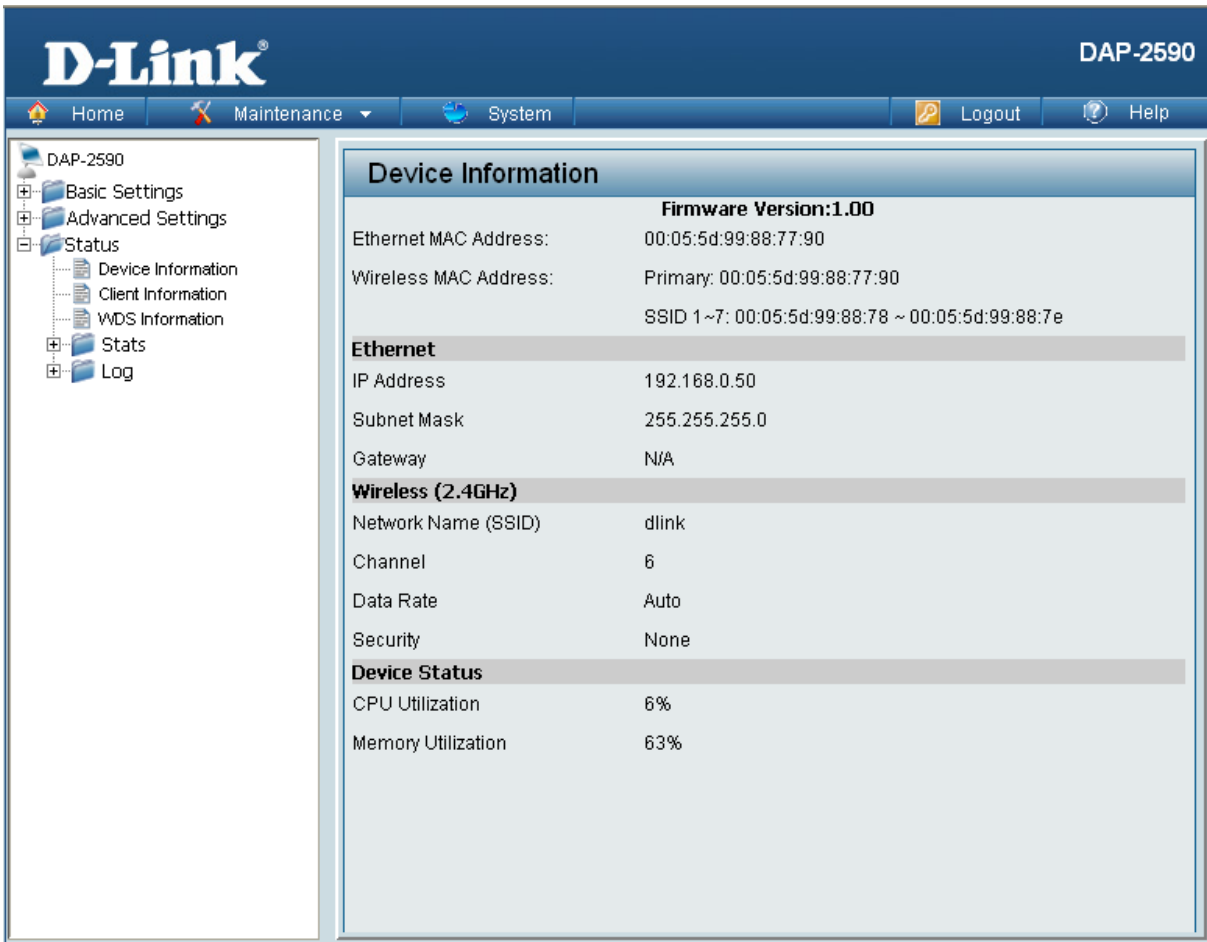
MAC Address List: When you enter a MAC address, it appears in this list. Highlight a MAC address and click **Delete** to remove it from this list.

Home > Advanced Settings > Filters > WLAN Partition



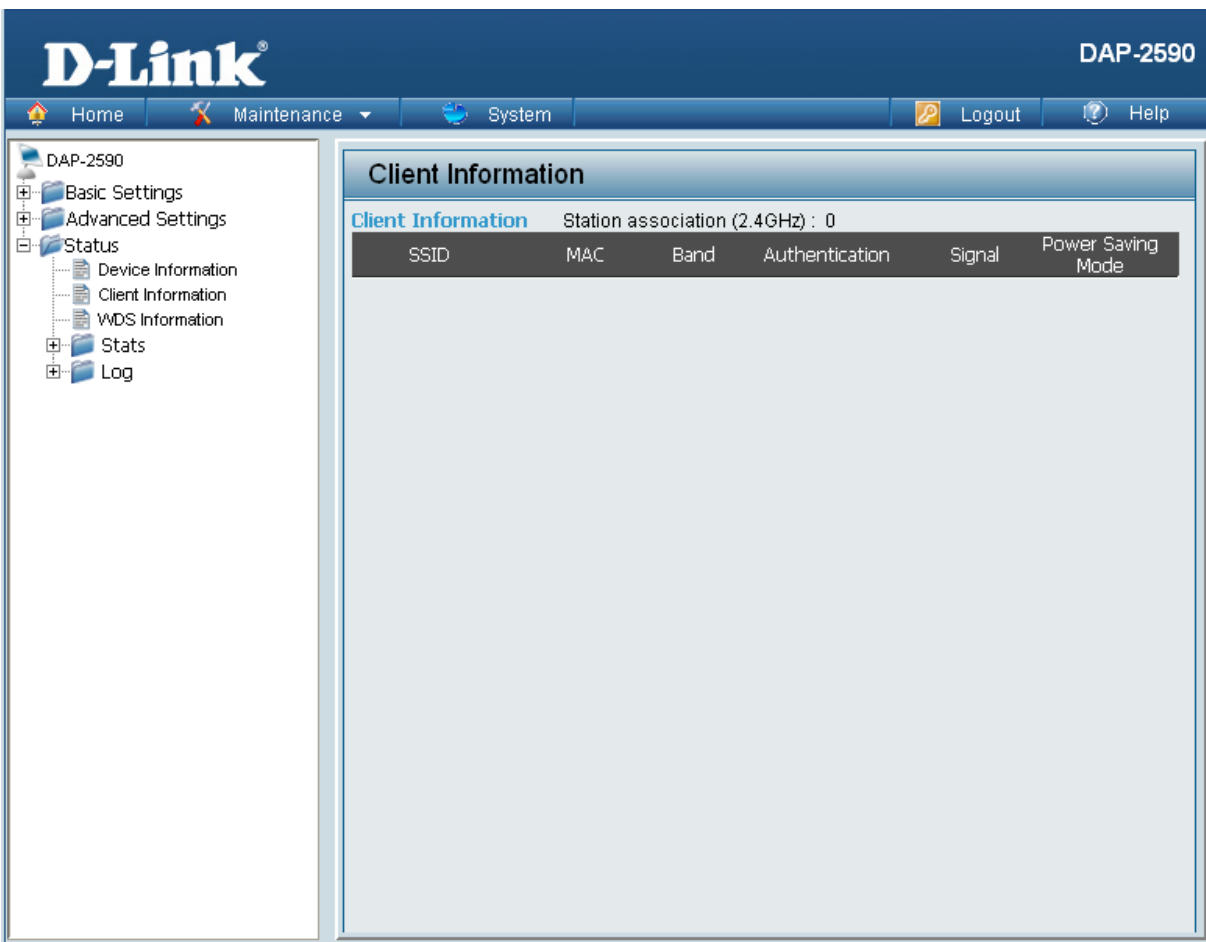
Wireless Band:	Displays the current wireless band rate.
Internal Station Connection:	The default value is Enable , which allows stations to intercommunicate by connecting to a target AP. When disabled, wireless stations cannot exchange data through the AP.
Ethernet to WLAN Access:	The default is Enable . When disabled, all data from the Ethernet to associated wireless devices will be blocked. Wireless devices can still send data to the Ethernet.

Home > Status > Device Information



Device Information: This read-only window displays the configuration settings of the DAP-2590, including the firmware version and the device's MAC address.

Home > Status > Client Information

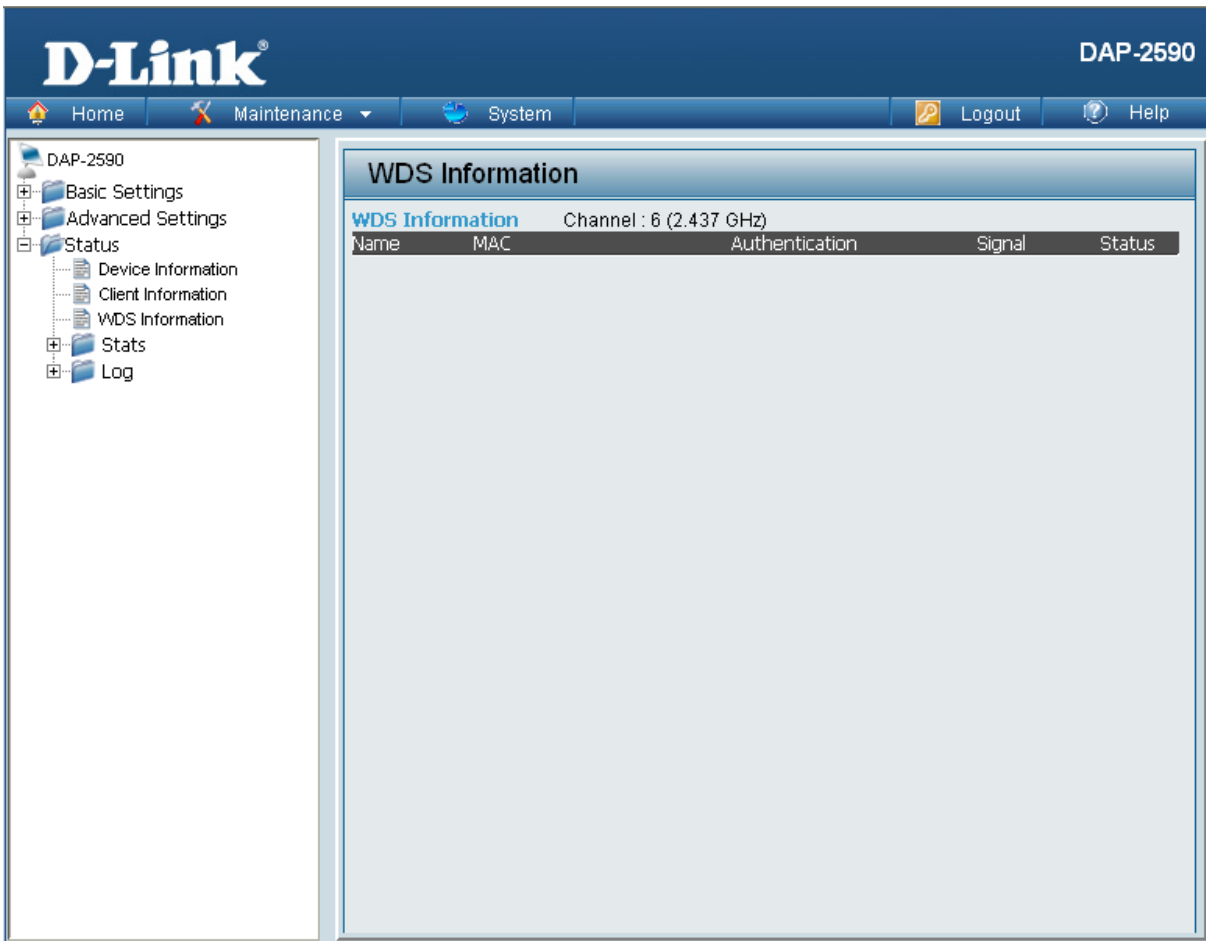


Client Information: This window displays the wireless client information for clients currently connected to the DAP-2590.

The following information is available for each client communicating with the DAP-2590.

- SSID:** Displays the SSID of the client.
- MAC:** Displays the MAC address of the client.
- Band:** Displays the wireless band that the client is connected to.
- Authentication:** Displays the type of authentication being used.
- Signal:** Displays the client's signal strength.
- Power Saving Mode:** Displays the status of the power saving feature.

Home > Status > WDS Information

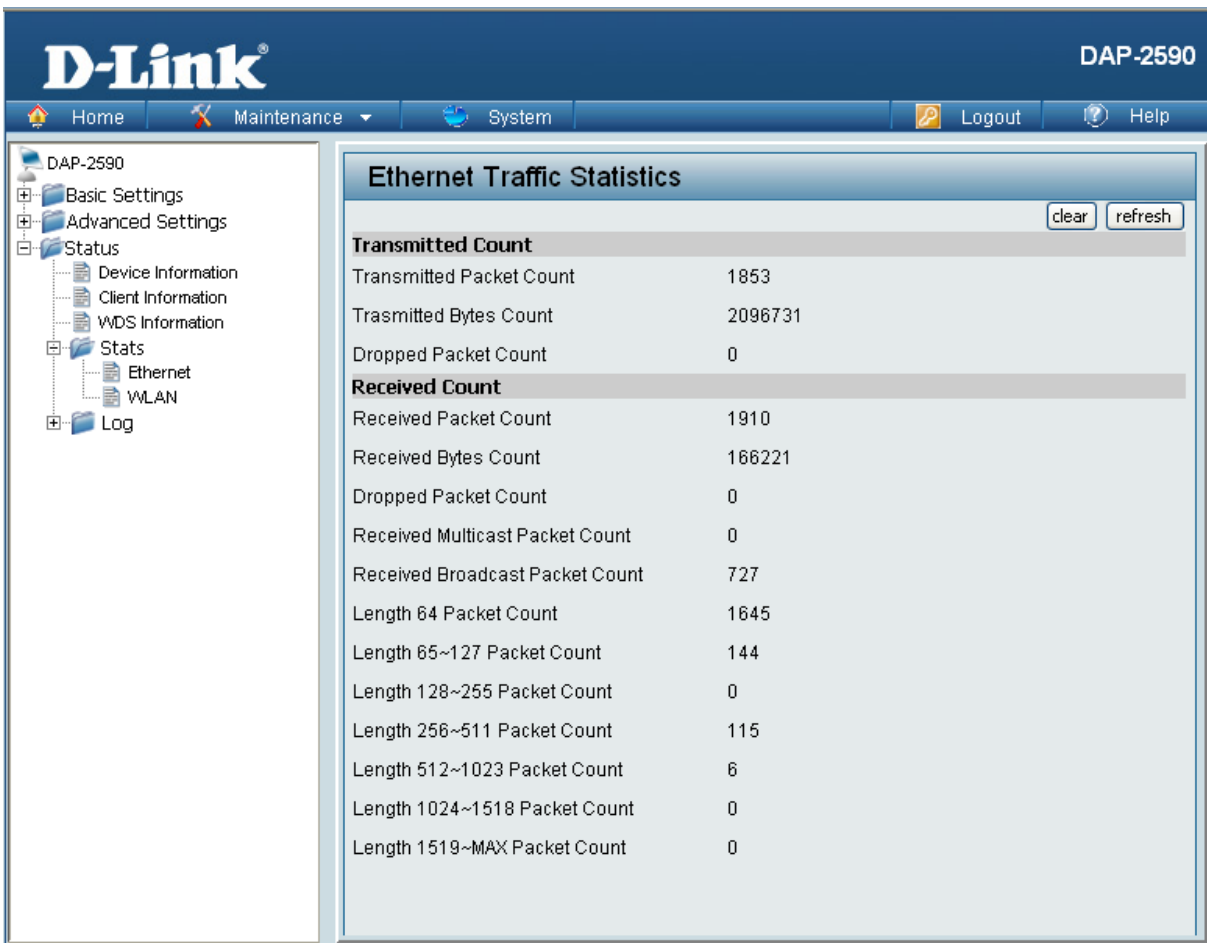


WDS Information: This window displays the Wireless Distribution System information for clients currently connected to the DAP-2590.

The following information is available for each client communicating with the DAP-2590.

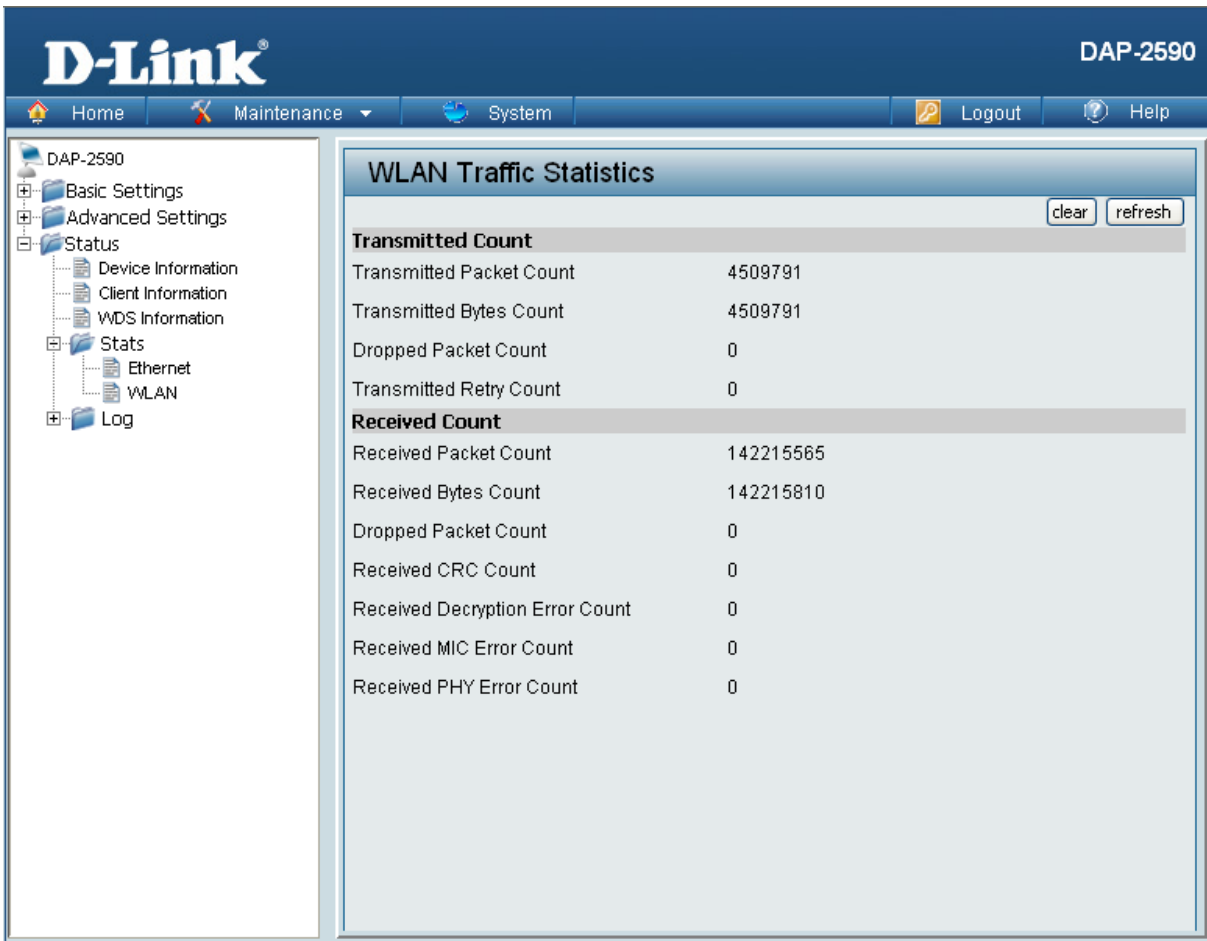
- Name:** Displays the name of the client.
- MAC:** Displays the MAC address of the client.
- Authentication:** Displays the type of authentication being used.
- Signal:** Displays the WDS link signal strength.
- Status:** Displays the status of the power saving feature.

Home > Status > Stats > Ethernet



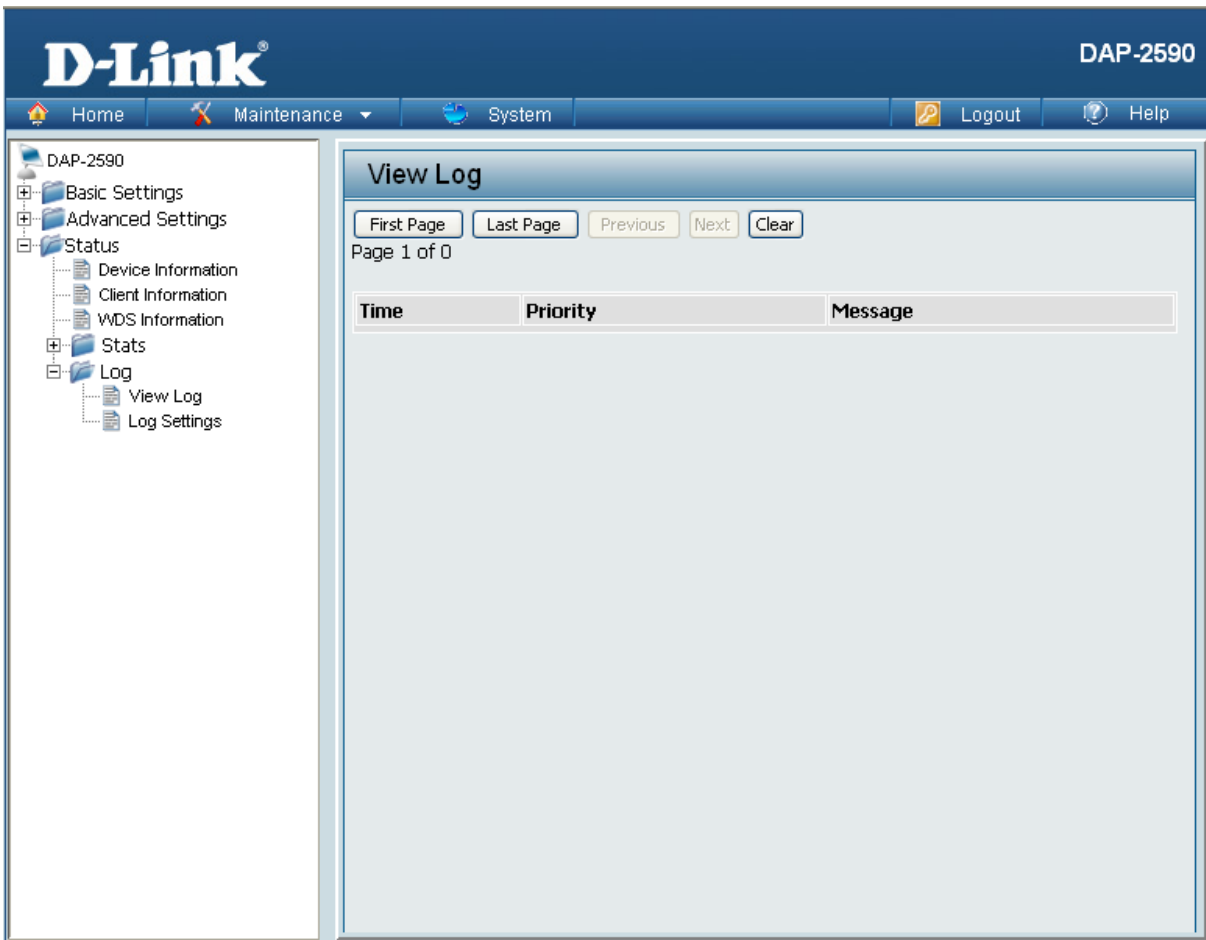
Ethernet Traffic Statistics: This page displays transmitted and received count statistics for packets and bytes.

Home > Status > Stats > WLAN



WLAN Traffic Statistics: This page displays wireless network statistics for data throughput, transmitted and received frames, and frame errors.

Home > Status > Log > View Log



View Log: The AP's embedded memory displays system and network messages including a time stamp and message type. The log information includes but is not limited to the following items: cold start AP, upgrading firmware, client associate and disassociate with AP, and web login. The web page holds up to 500 logs.

Home > Status > Log > Log Settings

D-Link DAP-2590

Home Maintenance System Logout Help

DAP-2590

- Basic Settings
- Advanced Settings
- Status
 - Device Information
 - Client Information
 - WDS Information
 - Stats
 - Log
 - View Log
 - Log Settings

Log Settings

Log Server / IP Address:

Log Type: System Activity
 Wireless Activity
 Notice

Email Notification

Email Notification: Enable

From Email Address:

To Email Address:

Email Server Address:

SMTP Port:

User Name:

Password:

Confirm Password:

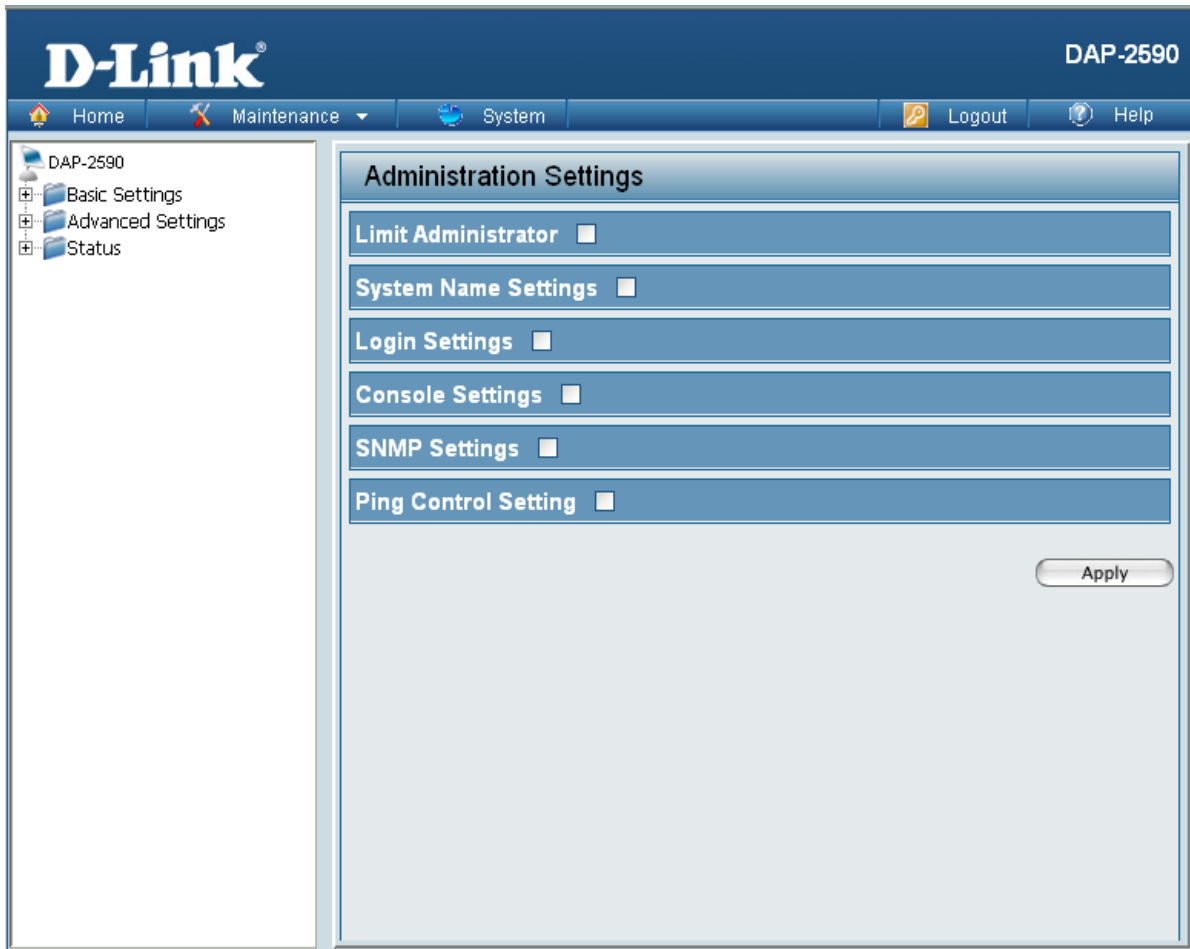
Email Log Schedule

Schedule: hours or when Log is full

Apply

- Log Server/IP Address:** Enter the IP address of the server you would like to send the DAP-2590 log to.
- Log Type:** Check the box for the type of activity you want to log. There are three types: System Activity, Wireless Activity, and Notice.
- Email Notification:** Check the box to enable Simple Mail Transfer Protocol.
- From Email Address:** Enter the e-mail address of the e-mail/SMTP sender.
- To Email Address:** Enter the e-mail address of the e-mail/SMTP recipient.
- Email Server Address:** Enter the IP address of the e-mail/SMTP server.
- SMTP Port:** Enter the desired SMTP port number. The default value is 25.
- User Name:** Enter a user name for the SMTP server.
- Password:** Enter a password for the SMTP server.
- Confirm Password:** Confirm the password for the SMTP server by retyping it.
- Schedule:** Use the pull-down menu to set the e-mail log schedule.

Maintenance > Administrator Settings



Check one or more of the six main categories to display the various hidden administrator parameters and settings displayed on the next six pages.

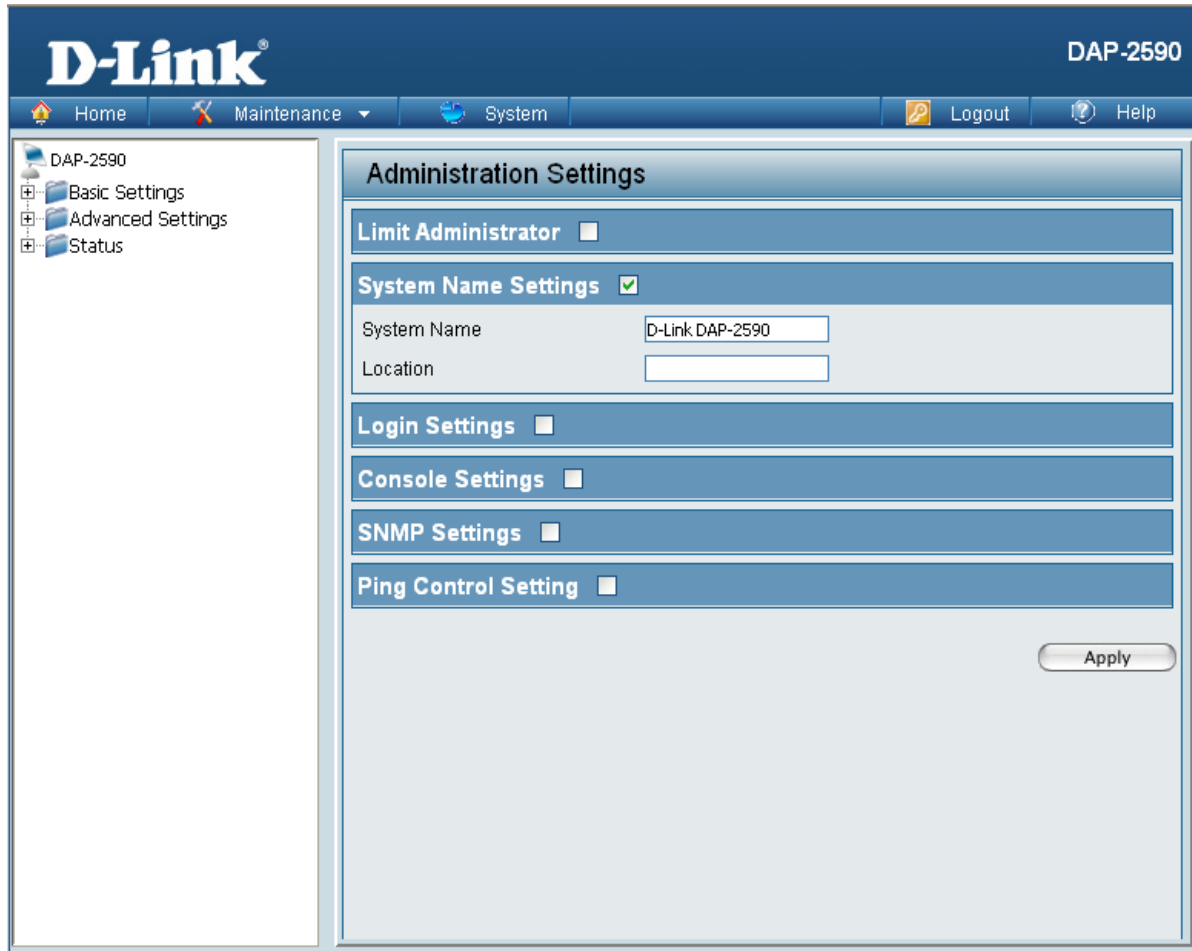
Maintenance > Administrator Settings > Limit Administrator

Each of the six main categories display various hidden administrator parameters and settings.

Limit Administrator

- Limit Administrator VLAN ID:** Check the box provided and then enter the specific VLAN ID that the administrator will be allowed to log in from.
- Limit Administrator IP:** Check to enable the Limit Administrator IP address.
- IP Range:** Enter the IP address range that the administrator will be allowed to log in from and then click the Add button.

Maintenance > Administrator Settings > System Name Settings



Each of the six main categories display various hidden administrator parameters and settings.

System Name Settings

System Name: The name of the device. The default name is **D-Link DAP-2590**.

Location: The physical location of the device, e.g. "office".

Maintenance > Administrator Settings > Login Settings

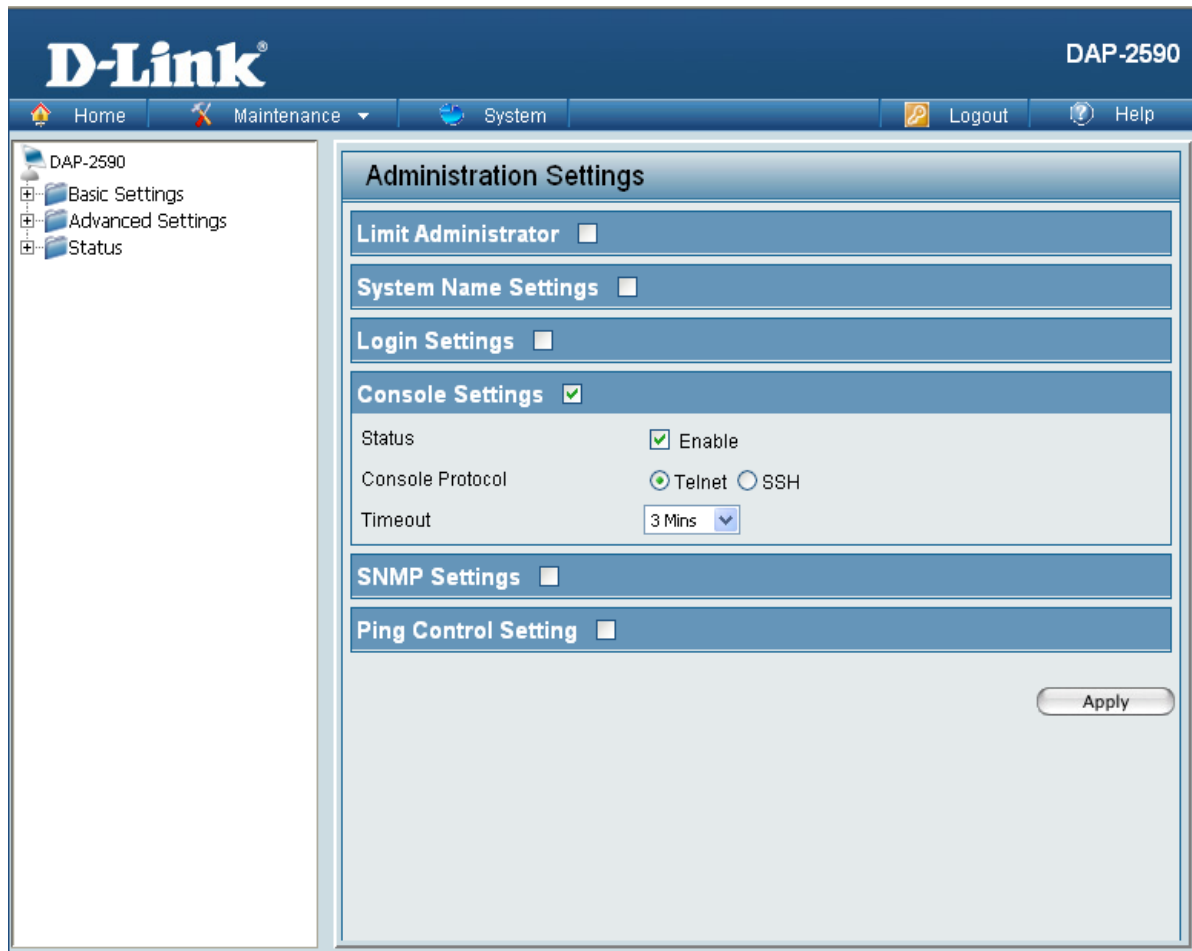
The screenshot shows the D-Link DAP-2590 web interface. The top navigation bar includes 'Home', 'Maintenance', 'System', 'Logout', and 'Help'. The left sidebar shows a tree view with 'DAP-2590', 'Basic Settings', 'Advanced Settings', and 'Status'. The main content area is titled 'Administration Settings' and contains several sections: 'Limit Administrator' (checkbox), 'System Name Settings' (checkbox), 'Login Settings' (checkbox checked), 'Console Settings' (checkbox), 'SNMP Settings' (checkbox), and 'Ping Control Setting' (checkbox). The 'Login Settings' section is expanded, showing four input fields: 'Login Name' (containing 'admin'), 'Old Password', 'New Password', and 'Confirm Password'. An 'Apply' button is located at the bottom right of the main content area.

Each of the six main categories display various hidden administrator parameters and settings.

Login Settings

- | | |
|--------------------------|--|
| User Name: | Enter a user name. The default is admin . |
| Old Password: | When changing your password, enter the old password here. |
| New Password: | When changing your password, enter the new password here. The password is case-sensitive. "A" is a different character than "a." The length should be between 0 and 12 characters. |
| Confirm Password: | Enter the new password a second time for confirmation purposes. |

Maintenance > Administrator Settings > Console Settings

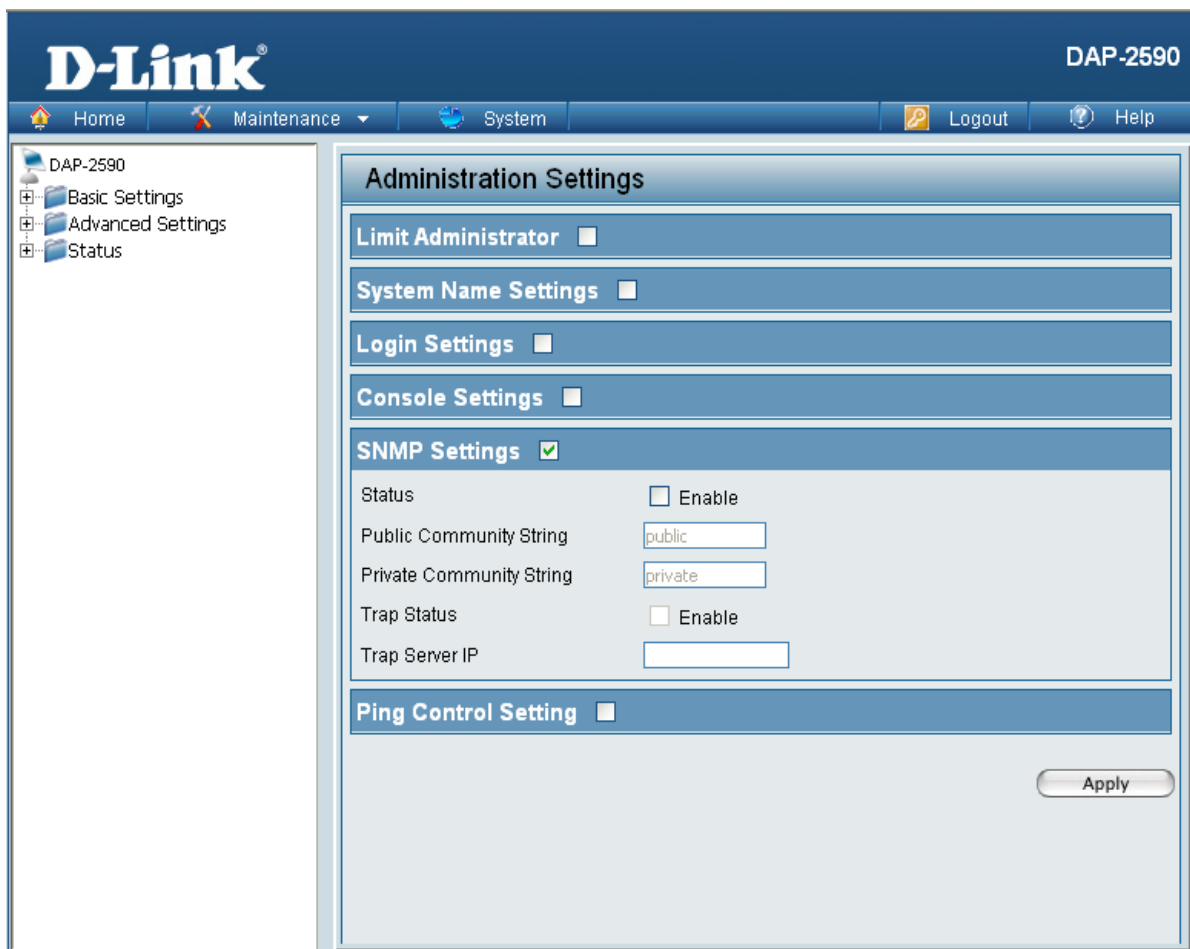


Each of the six main categories display various hidden administrator parameters and settings.

Console Settings

- Status:** Status is enabled by default. Uncheck the box to disable the console.
- Console Protocol:** Select the type of protocol you would like to use, **Telnet** or **SSH**.
- Timeout:** Set to **1 Min**, **3 Mins**, **5 Mins**, **10 Mins**, **15 Mins** or **Never**.

Maintenance > Administrator Settings > SNMP Settings

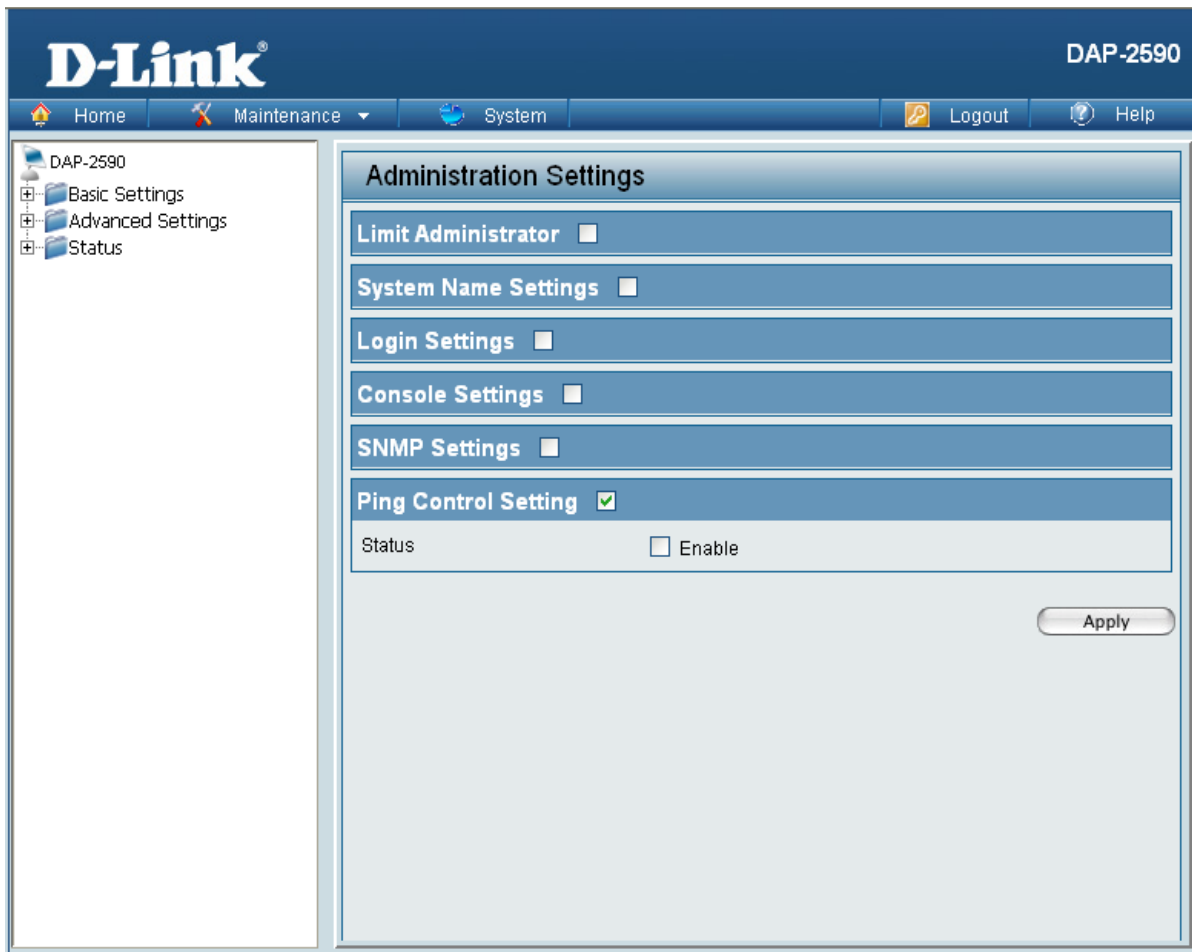


Each of the six main categories display various hidden administrator parameters and settings.

SNMP Settings

Status:	Check the box to enable the SNMP functions. This is enabled by default.
Public Community String:	Enter the public SNMP community string.
Private Community String:	Enter the private SNMP community string.
Trap Status:	Check the box to enable the trap status.
Trap Server IP:	Enter the trap server IP address. This is the IP address of the SNMP manager to receive traps sent from the wireless access point.

Maintenance > Administrator Settings > Ping Control Setting



Each of the six main categories display various hidden administrator parameters and settings.

Ping Control Setting

Status: Check the box to enable Ping control. Ping works by sending ICMP “echo request” packets to the target host and listening for ICMP echo response replies. The default is disabled.

Maintenance > Firmware and SSL Certification Upload

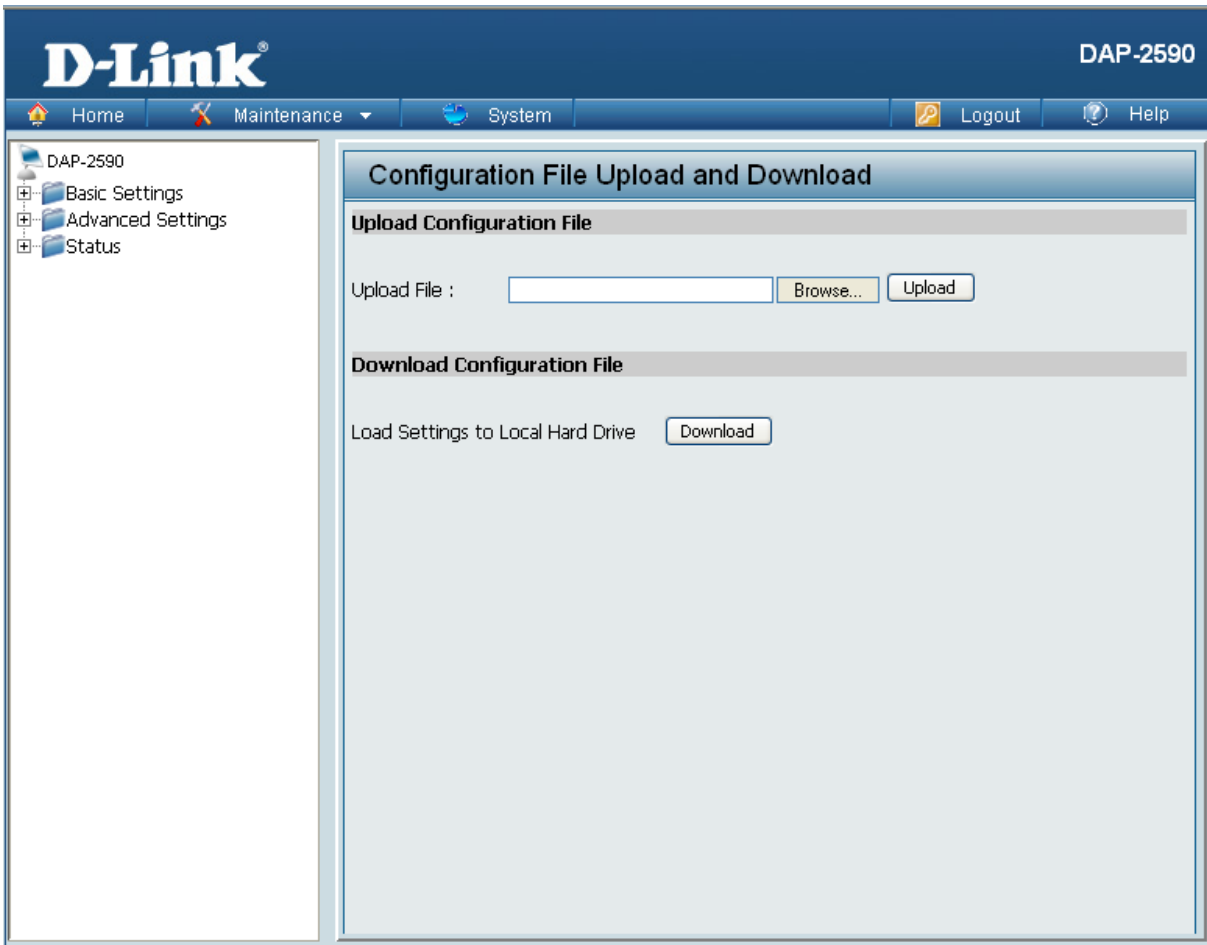
Upload Firmware From Local Hard Drive:

The current firmware version is displayed above the file location field. After downloading the most recent version of firmware for the DAP-2590 from <http://support.dlink.com> to your local computer, use the **Browse** button to locate the firmware file on your computer. Click **Upload** to update the firmware version. Please don't turn the power off while upgrading.

Upload SSL Certification From Local Hard Drive:

Click **Browse** to locate the SSL Certification file on your local computer. After selecting and opening the file, click **Upload** to upload the file to the DAP-2590.

Maintenance > Configuration File



Upload File: Click the **Browse** button to locate a previously saved configuration file on your local computer. After selecting the file, click **Upload** to apply the configuration settings to the DAP-2590.

Download Configuration File: Click **Download** to save the current DAP-2590 configuration to your local computer. Note that if you save one configuration with the administrator's password now, after resetting your DAP-2590, and then updating to this saved configuration file, the password will be gone.

Maintenance > Time and Date

D-Link DAP-2590

Home Maintenance System Logout Help

DAP-2590
 Basic Settings
 Advanced Settings
 Status

Time and Date Settings

Time Configuration

Current Time 12/31/1999 16:55:33

Time Zone (GMT-08:00) Pacific Time (US & Canada); Tijuana

Enable Daylight Saving

Daylight Saving Offset +1:00

Daylight Saving Dates	Month	Week	Day of Week	Current Time
DST Start	Jan	1st	Sun	12 am
DST End	Jan	1st	Sun	12 am

Automatic Time Configuration

Enable NTP Server

NTP Server << Select NTP Server

Set the Date and Time Manually

Date And Time

Year	2008	Month	May	Day	27
Hour	10	Minute	7	Second	24

Copy Your Computer's Time Settings

Apply

Current Time: Displays the current time and date settings.

Time Zone: Use the pull-down menu to select your correct Time Zone.

Enable Daylight Saving: Check the box to Enable Daylight Saving Time.

Daylight Saving Offset: Use the pull-down menu to select the correct Daylight Saving offset.

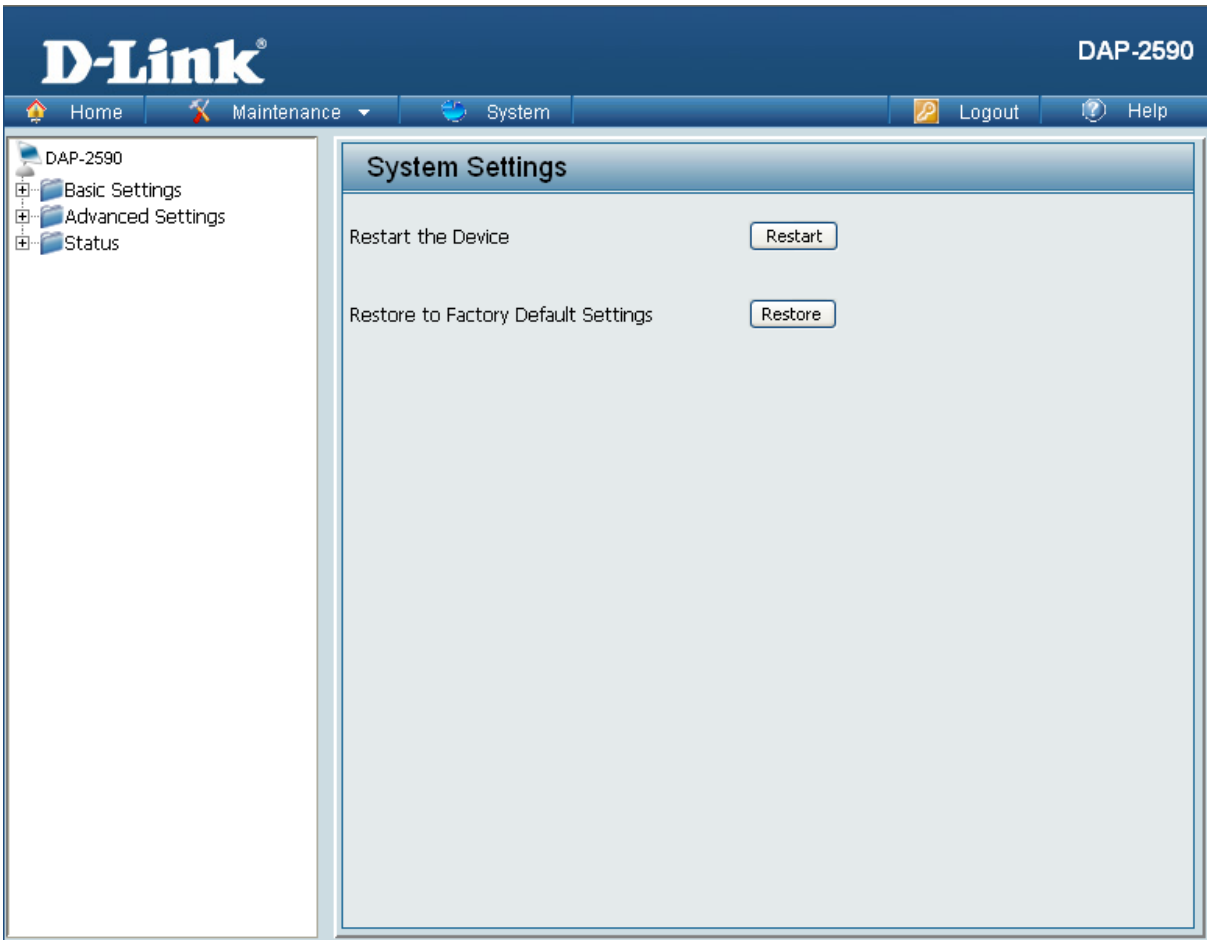
Daylight Saving Dates: Use the pull-down menu to select the correct Daylight Saving offset.

Enable NTP Server: Check to enable the AP to get system time from an NTP server.

NTP Server: Enter the NTP server IP address.

Set the Date and Time Manually: You can either manually set the time for your AP here, or you can click the **Copy Your Computer's Time Settings** button to copy the time from the computer you are using (Make sure that the computer's time is set correctly).

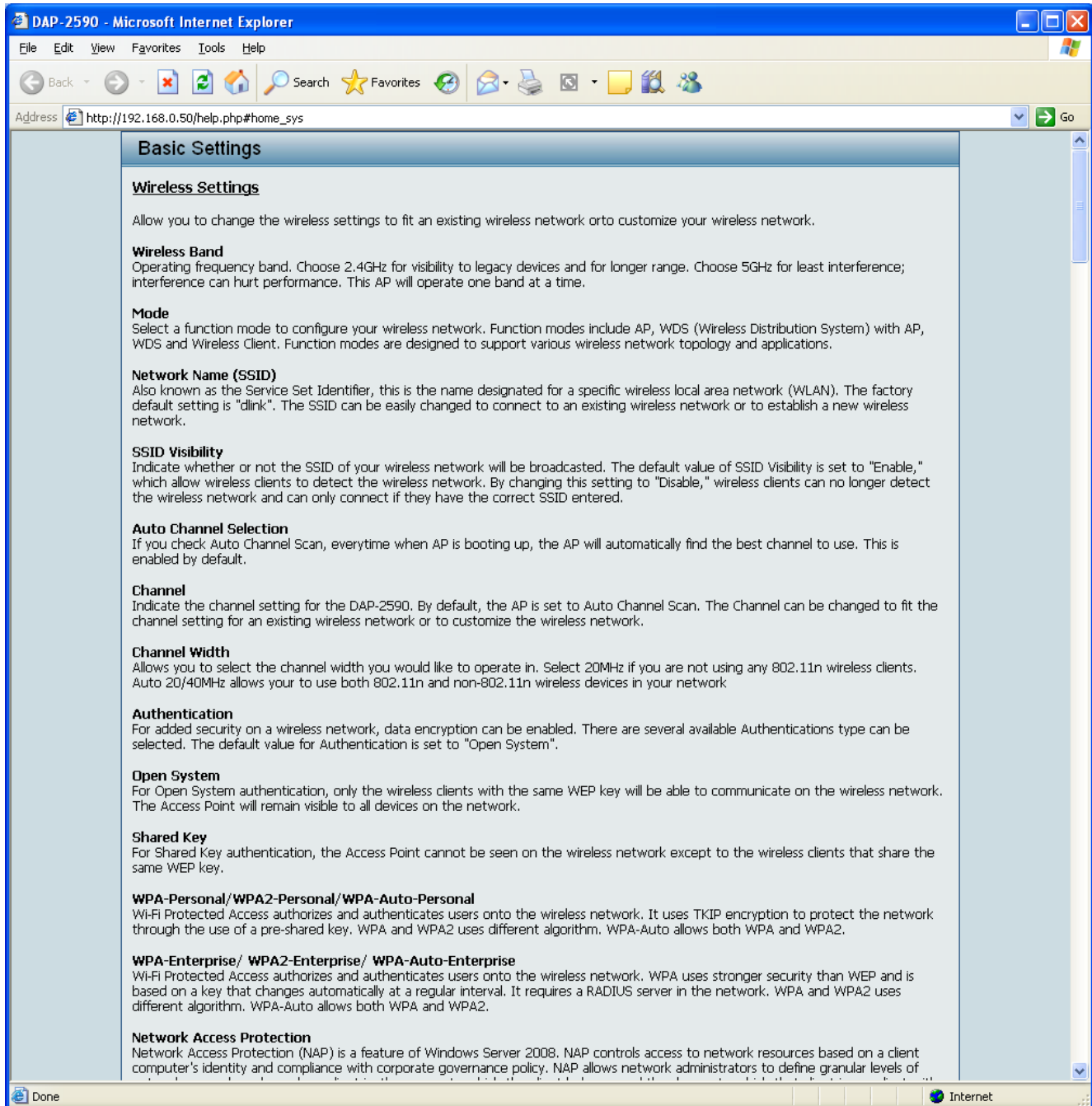
System > System Settings



Restart the Device: Click **Restart** to restart the DAP-2590.

Restore to Factory Default Settings: Click **Restore** to restore the DAP-2590 back to factory default settings.

Help



Help: | Scroll down the Help page for topics and explanations.

Troubleshooting

This chapter provides solutions to problems that can occur during the installation and operation of the DAP-2590 Wireless Access Point. We will cover various aspects of the network setup, especially the network adapters. Please read the following if you are having any technical difficulties.

Note: It is recommended that you use an Ethernet connection to configure the DAP-2590.

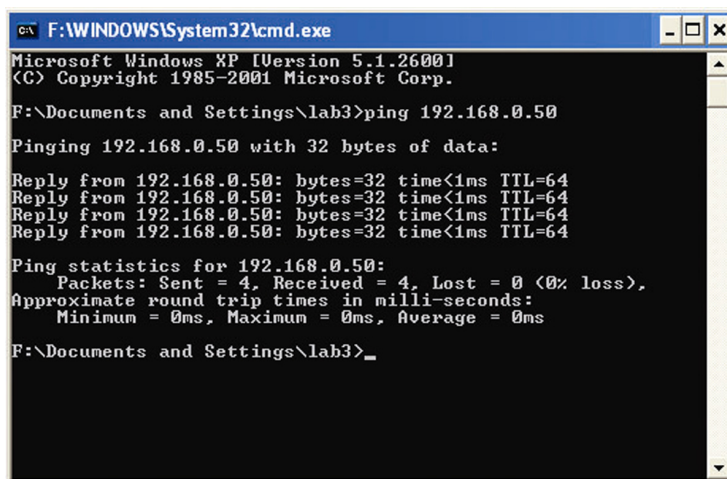
1. The computer used to configure the DAP-2590 cannot access the Configuration menu.

- Check if the LAN LED on the DAP-2590 is ON. If the LED is not ON, check if the cable for the Ethernet connection is securely inserted.
- Check if the Ethernet adapter is working properly. Please see item 3 of this Troubleshooting section to check that the drivers for the network adapters are loaded properly.
- Check if the IP address is in the same range and subnet as the DAP-2590.

Note: The default IP address of the DAP-2590 is 192.168.0.50. All the computers on the network must have a unique IP address in the same range, e.g. 192.168.0.x. Any computers that have identical IP addresses will not be visible on the network. They must all have the same subnet mask, e.g. 255.255.255.0.

- Do a Ping test to make sure that the DAP-2590 is responding. Go to **Start>Run>Type Command>Type ping 192.168.0.50**. A successful ping will show four replies.

Note: If you have changed the default IP address, make sure to ping the correct IP address assigned to the DAP-2590.



```
ca F:\WINDOWS\System32\cmd.exe
Microsoft Windows XP [Version 5.1.2600]
(C) Copyright 1985-2001 Microsoft Corp.

F:\Documents and Settings\lab3>ping 192.168.0.50

Pinging 192.168.0.50 with 32 bytes of data:

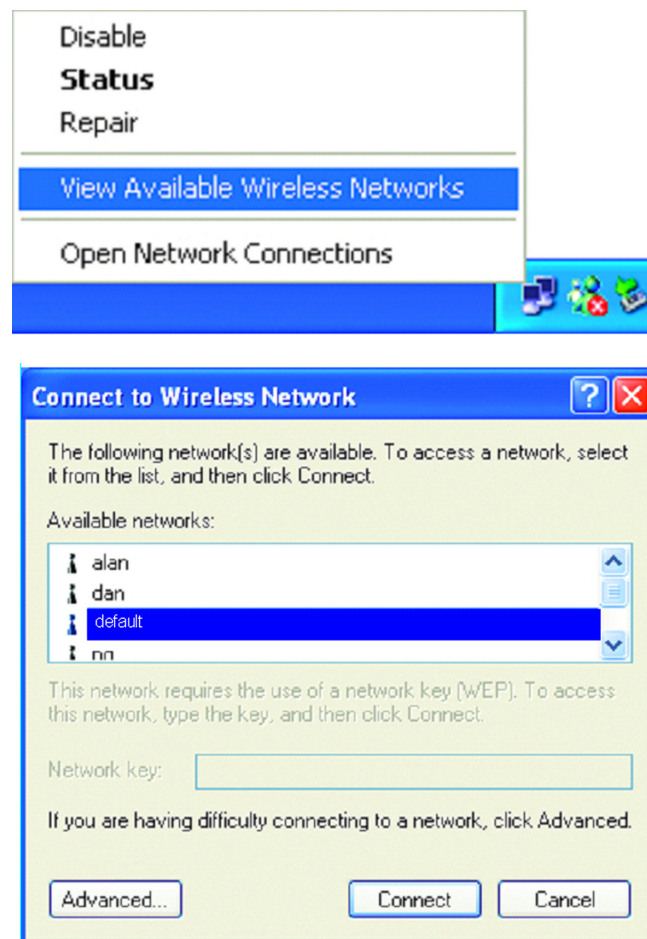
Reply from 192.168.0.50: bytes=32 time<1ms TTL=64
Reply from 192.168.0.50: bytes=32 time<1ms TTL=64
Reply from 192.168.0.50: bytes=32 time<1ms TTL=64
Reply from 192.168.0.50: bytes=32 time<1ms TTL=64

Ping statistics for 192.168.0.50:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 0ms, Average = 0ms

F:\Documents and Settings\lab3>_
```

2. The wireless client cannot access the Internet within Infrastructure mode.

Make sure the wireless client is associated and joined with the correct access point. To check this connection, right-click on the **Local Area Connection** icon in the taskbar and select **View Available Wireless Networks**. The **Connect to Wireless Network** screen will appear. Please make sure you have selected the correct available network, as shown in the illustrations below.



- Check that the IP address assigned to the wireless adapter is within the same IP address range as the access point and gateway. Since the DAP-2590 has an IP address of 192.168.0.50, wireless adapters must have an IP address in the same range, e.g. 192.168.0.x. Each device must have a unique IP address; there may be no two devices with the same IP address. The subnet mask must be the same for all the computers on the network. To check the IP address assigned to the wireless adapter, double-click the **Local Area Connection** icon in the taskbar, then select the **Support** tab and the IP address will be displayed.
- If it is necessary to assign a Static IP Address to the wireless adapter. If you are entering a DNS Server address, you must also enter the Default Gateway Address. *Remember that if you have a DHCP-capable router, you will not need to assign a static IP address.*

3. What variables may cause my wireless products to lose reception?

D-Link products let you access your network from virtually anywhere you want, however, the positioning of the products within your environment will affect its wireless range.

4. Why does my wireless connection keep dropping?

- Antenna Orientation - try different antenna orientations for the DAP-2590. Try to keep the antenna at least 6 inches away from the wall or other objects.
- If you are using 2.4 GHz cordless phones, X-10 equipment or other home security systems, ceiling fans, or lights, your wireless connection will degrade dramatically or even drop. Try changing the channel of your router, access point and wireless adapter to a different channel to avoid interference.
- Keep your product away - at least 3-6 feet - from electrical devices that generate RF noise like microwaves, monitors, electric motors, etc.

5. Why can't I get a wireless connection?

If you have enabled encryption on the DAP-2590, you must also enable encryption on all wireless clients in order to establish a wireless connection.

- Make sure that the SSID on the AP and the wireless client are exactly the same. If they are not, wireless connection cannot be established.
- Move the DAP-2590 and the wireless client into the same room and then test the wireless connection.
- Disable all security settings.
- Turn off your DAP-2590 and the client. Turn the DAP-2590 back on again, and then turn on the client.
- Make sure that all devices are set to Infrastructure mode.
- Check that the LED indicators are indicating normal activity. If not, check that the AC power and Ethernet cables are firmly connected.
- Check that the IP address, subnet mask, gateway, and DNS settings are correctly entered for the network.
- If you are using 2.4 GHz cordless phones, X-10 equipment, or other home security systems, ceiling fans, or lights, your wireless connection will degrade dramatically or drop altogether. Try changing the channel on your DAP-2590, and on all the devices in your network to avoid interference.
- Keep your product away - at least 3-6 feet - from electrical devices that generate RF noise like microwaves, monitors, electric motors, etc.

Technical Specifications

Standards

- IEEE 802.11a
- IEEE 802.11b
- IEEE 802.11g
- IEEE 802.11n (draft)
- IEEE 802.3
- IEEE 802.3u
- IEEE 802.3ab
- IEEE 802.3af

Network Management

- Web Browser interface
 - HTTP
 - Secure HTTP (HTTPS)
- AP Manager II
- SNMP Support
 - D-View Module
 - Private MIB
- Command Line Interface
 - Telnet
 - Secure SSH Telnet

Data Rates*

For 802.11a:

- 54, 48, 36, 24, 18, 12, 9, and 6 Mbps

For 802.11b:

- 11, 5.5, 2, and 1 Mbps

For 802.11g:

- 54, 48, 36, 24, 18, 12, 9, and 6 Mbps

For 802.11n (draft): HT20/HT40

- 144.4/300, 130/270, 117/243, 104/216, 78/162, 66/135, 58.5/121.5, 52/108, 39/81, 26/54, 19.5/40.5, 12/27, and 6.5/13.5 Mbps

Security

- WPA™ Personal/Enterprise
- WPA2™ Personal/Enterprise
- WEP™ 64-/128-bit
- SSID Broadcast Disable
- MAC Address Access Control

Wireless Frequency Range

- 2.4 to 2.4835 GHz and 5.15 to 5.85 GHz**

Operating Voltage

- 5V/2.5A or PoE

* Maximum wireless signal rate derived from IEEE Standard 802.11g, 802.11a and Draft 802.11n specifications. Actual data throughput will vary. Network conditions and environmental factors, including volume of network traffic, building materials and construction, and network overhead, lower actual data throughput rate. Environmental conditions will adversely affect wireless signal range.

**Please note that operating frequency ranges vary depending on the regulations of individual countries and jurisdictions. The DAP-2590 isn't supported in the 5.25~5.35 GHz and 5.47 ~ 5.725 GHz frequency ranges in some regions.

Radio and Modulation Type

For 802.11a/g/n:

BPSK, QPSK, 16QAM, and 64QAM with OFDM

For 802.11b:

DQPSK, DBPSK, DSSS, and CCK

Operating Frequency*

For 802.11a:

5.15 ~ 5.85 GHz

For 802.11b/g:

2400 ~ 2483.5 MHz ISM band

For 802.11n:

2.4 GHz Band: 2.4 ~ 2.4835 GHz

5 GHz Band: 5.15 ~ 5.85 GHz

Dipole Antenna

4dBi Gain @2.4 GHz

6dBi Gain @5 GHz

LEDs

- Power
- LAN
- 2.4 GHz
- 5 GHz

Temperature

- Operating: 0°C to 40°C
- Storing: -20°C to 65°C

Humidity

- Operating: 10%~90% (non-condensing)
- Storing: 5%~95% (non-condensing)

Certifications

- FCC
- CE
- IC
- C-Tick
- UL
- WiFi

Dimensions

- L = 184.66 mm
- W = 164.59 mm
- H = 31.75 mm

*Please note that operating frequency ranges vary depending on the regulations of individual countries and jurisdictions. The DAP-2590 isn't supported in the 5.25~5.35 GHz and 5.47 ~ 5.725 GHz frequency ranges in some regions.

Warranty

Subject to the terms and conditions set forth herein, D-Link Systems, Inc. ("D-Link") provides this Limited Warranty:

- Only to the person or entity that originally purchased the product from D-Link or its authorized reseller or distributor, and
- Only for products purchased and delivered within the fifty states of the United States, the District of Columbia, U.S. Possessions or Protectorates, U.S. Military Installations, or addresses with an APO or FPO.

Limited Warranty:

D-Link warrants that the hardware portion of the D-Link product described below ("Hardware") will be free from material defects in workmanship and materials under normal use from the date of original retail purchase of the product, for the period set forth below ("Warranty Period"), except as otherwise stated herein.

- Hardware (excluding power supplies and fans): One (1) year
- Power supplies and fans: One (1) year
- Spare parts and spare kits: Ninety (90) days

The customer's sole and exclusive remedy and the entire liability of D-Link and its suppliers under this Limited Warranty will be, at D-Link's option, to repair or replace the defective Hardware during the Warranty Period at no charge to the original owner or to refund the actual purchase price paid. Any repair or replacement will be rendered by D-Link at an Authorized D-Link Service Office. The replacement hardware need not be new or have an identical make, model or part. D-Link may, at its option, replace the defective Hardware or any part thereof with any reconditioned product that D-Link reasonably determines is substantially equivalent (or superior) in all material respects to the defective Hardware. Repaired or replacement hardware will be warranted for the remainder of the original Warranty Period or ninety (90) days, whichever is longer, and is subject to the same limitations and exclusions. If a material defect is incapable of correction, or if D-Link determines that it is not practical to repair or replace the defective Hardware, the actual price paid by the original purchaser for the defective Hardware will be refunded by D-Link upon return to D-Link of the defective Hardware. All Hardware or part thereof that is replaced by D-Link, or for which the purchase price is refunded, shall become the property of D-Link upon replacement or refund.

Limited Software Warranty:

D-Link warrants that the software portion of the product ("Software") will substantially conform to D-Link's then current functional specifications for the Software, as set forth in the applicable documentation, from the date of original retail purchase of the Software for a period of ninety (90) days ("Software Warranty Period"), provided that the Software is properly installed on approved hardware and operated as contemplated in its documentation. D-Link further warrants that, during the Software Warranty Period, the magnetic media on which D-Link delivers the Software will be free of physical defects. The customer's sole and exclusive remedy and the entire liability

of D-Link and its suppliers under this Limited Warranty will be, at D-Link's option, to replace the non-conforming Software (or defective media) with software that substantially conforms to D-Link's functional specifications for the Software or to refund the portion of the actual purchase price paid that is attributable to the Software. Except as otherwise agreed by DLink in writing, the replacement Software is provided only to the original licensee, and is subject to the terms and conditions of the license granted by D-Link for the Software. Replacement Software will be warranted for the remainder of the original Warranty Period and is subject to the same limitations and exclusions. If a material non-conformance is incapable of correction, or if D-Link determines in its sole discretion that it is not practical to replace the non-conforming Software, the price paid by the original licensee for the non-conforming Software will be refunded by D-Link; provided that the non-conforming Software (and all copies thereof) is first returned to D-Link. The license granted respecting any Software for which a refund is given automatically terminates.

Non-Applicability of Warranty:

The Limited Warranty provided hereunder for Hardware and Software portions of D-Link's products will not be applied to and does not cover any refurbished product and any product purchased through the inventory clearance or liquidation sale or other sales in which D-Link, the sellers, or the liquidators expressly disclaim their warranty obligation pertaining to the product and in that case, the product is being sold "As-Is" without any warranty whatsoever including, without limitation, the Limited Warranty as described herein, notwithstanding anything stated herein to the contrary.

Submitting A Claim:

The customer shall return the product to the original purchase point based on its return policy. In case the return policy period has expired and the product is within warranty, the customer shall submit a claim to D-Link as outlined below:

- The customer must submit with the product as part of the claim a written description of the Hardware defect or Software nonconformance in sufficient detail to allow DLink to confirm the same, along with proof of purchase of the product (such as a copy of the dated purchase invoice for the product) if the product is not registered.
- The customer must obtain a Case ID Number from D-Link Technical Support at 1-877-354-6555, who will attempt to assist the customer in resolving any suspected defects with the product. If the product is considered defective, the customer must obtain a Return Material Authorization ("RMA") number by completing the RMA form and entering the assigned Case ID Number at <https://rma.dlink.com/>.
- After an RMA number is issued, the defective product must be packaged securely in the original or other suitable shipping package to ensure that it will not be damaged in transit, and the RMA number must be prominently marked on the outside of the package. Do not include any manuals or accessories in the shipping package. DLink will only replace the defective portion of the product and will not ship back any accessories.

- The customer is responsible for all in-bound shipping charges to D-Link. No Cash on Delivery ("COD") is allowed. Products sent COD will either be rejected by D-Link or become the property of D-Link. Products shall be fully insured by the customer and shipped to D-Link Systems, Inc., 17595 Mt. Herrmann, Fountain Valley, CA 92708. D-Link will not be held responsible for any packages that are lost in transit to D-Link. The repaired or replaced packages will be shipped to the customer via UPS Ground or any common carrier selected by D-Link. Return shipping charges shall be prepaid by D-Link if you use an address in the United States, otherwise we will ship the product to you freight collect. Expedited shipping is available upon request and provided shipping charges are prepaid by the customer. D-Link may reject or return any product that is not packaged and shipped in strict compliance with the foregoing requirements, or for which an RMA number is not visible from the outside of the package. The product owner agrees to pay D-Link's reasonable handling and return shipping charges for any product that is not packaged and shipped in accordance with the foregoing requirements, or that is determined by D-Link not to be defective or non-conforming.

What Is Not Covered:

The Limited Warranty provided herein by D-Link does not cover:

Products that, in D-Link's judgment, have been subjected to abuse, accident, alteration, modification, tampering, negligence, misuse, faulty installation, lack of reasonable care, repair or service in any way that is not contemplated in the documentation for the product, or if the model or serial number has been altered, tampered with, defaced or removed; Initial installation, installation and removal of the product for repair, and shipping costs; Operational adjustments covered in the operating manual for the product, and normal maintenance; Damage that occurs in shipment, due to act of God, failures due to power surge, and cosmetic damage; Any hardware, software, firmware or other products or services provided by anyone other than D-Link; and Products that have been purchased from inventory clearance or liquidation sales or other sales in which D-Link, the sellers, or the liquidators expressly disclaim their warranty obligation pertaining to the product.

While necessary maintenance or repairs on your Product can be performed by any company, we recommend that you use only an Authorized D-Link Service Office. Improper or incorrectly performed maintenance or repair voids this Limited Warranty.

Disclaimer of Other Warranties:

EXCEPT FOR THE LIMITED WARRANTY SPECIFIED HEREIN, THE PRODUCT IS PROVIDED "AS-IS" WITHOUT ANY WARRANTY OF ANY KIND WHATSOEVER INCLUDING, WITHOUT LIMITATION, ANY WARRANTY OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT.

IF ANY IMPLIED WARRANTY CANNOT BE DISCLAIMED IN ANY TERRITORY WHERE A PRODUCT IS SOLD, THE DURATION OF SUCH IMPLIED WARRANTY SHALL BE LIMITED TO THE DURATION OF THE APPLICABLE WARRANTY PERIOD SET FORTH ABOVE. EXCEPT AS EXPRESSLY COVERED UNDER THE LIMITED WARRANTY PROVIDED HEREIN, THE ENTIRE RISK AS TO THE QUALITY, SELECTION AND PERFORMANCE OF THE PRODUCT IS WITH THE PURCHASER OF THE PRODUCT.

Limitation of Liability:

TO THE MAXIMUM EXTENT PERMITTED BY LAW, D-LINK IS NOT LIABLE UNDER ANY CONTRACT, NEGLIGENCE, STRICT LIABILITY OR OTHER LEGAL OR EQUITABLE THEORY FOR ANY LOSS OF USE OF THE PRODUCT, INCONVENIENCE OR DAMAGES OF ANY CHARACTER, WHETHER DIRECT, SPECIAL, INCIDENTAL OR CONSEQUENTIAL (INCLUDING, BUT NOT LIMITED TO, DAMAGES FOR LOSS OF GOODWILL, LOSS OF REVENUE OR PROFIT, WORK STOPPAGE, COMPUTER FAILURE OR MALFUNCTION, FAILURE OF OTHER EQUIPMENT OR COMPUTER PROGRAMS TO WHICH D-LINK'S PRODUCT IS CONNECTED WITH, LOSS OF INFORMATION OR DATA CONTAINED IN, STORED ON, OR INTEGRATED WITH ANY PRODUCT RETURNED TO D-LINK FOR WARRANTY SERVICE) RESULTING FROM THE USE OF THE PRODUCT, RELATING TO WARRANTY SERVICE, OR ARISING OUT OF ANY BREACH OF THIS LIMITED WARRANTY, EVEN IF D-LINK HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES. THE SOLE REMEDY FOR A BREACH OF THE FOREGOING LIMITED WARRANTY IS REPAIR, REPLACEMENT OR REFUND OF THE DEFECTIVE OR NONCONFORMING PRODUCT. THE MAXIMUM LIABILITY OF D-LINK UNDER THIS WARRANTY IS LIMITED TO THE PURCHASE PRICE OF THE PRODUCT COVERED BY THE WARRANTY. THE FOREGOING EXPRESS WRITTEN WARRANTIES AND REMEDIES ARE EXCLUSIVE AND ARE IN LIEU OF ANY OTHER WARRANTIES OR REMEDIES, EXPRESS, IMPLIED OR STATUTORY.

Governing Law:

This Limited Warranty shall be governed by the laws of the State of California. Some states do not allow exclusion or limitation of incidental or consequential damages, or limitations on how long an implied warranty lasts, so the foregoing limitations and exclusions may not apply. This Limited Warranty provides specific legal rights and you may also have other rights which vary from state to state.

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CE Mark Warning:

This is a Class B product. In a domestic environment, this product may cause radio interference, in which case the user may be required to take adequate measures.

FCC Statement:

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communication. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

FCC Caution:

Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

(1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

If this device is going to be operated in 5.15 ~ 5.25GHz frequency range, then it is restricted in indoor environment only.

IMPORTANT NOTICE:**FCC Radiation Exposure Statement:**

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator & your body. This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

The availability of some specific channels and/or operational frequency bands are country dependent and are firmware programmed at the factory to match the intended destination. The firmware setting is not accessible by the end user.

For detailed warranty information applicable to products purchased outside the United States, please contact the corresponding local D-Link office.

Industry Canada Notice:

This device complies with RSS-210 of the Industry Canada Rules. Operation is subject to the following two conditions:

(1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

IMPORTANT NOTE:**Radiation Exposure Statement:**

This equipment complies with IC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator & your body.

This device has been designed to operate with an antenna having a maximum gain of 6 dB. Antenna having a higher gain is strictly prohibited per regulations of Industry Canada. The required antenna impedance is 50 ohms.

Technical Support

You can find software updates and user documentation on the D-Link website.

U.S. and Canadian customers can contact D-Link technical support through our website, or by phone.

Tech Support for customers within the United States:

D-Link Technical Support over the Telephone:
(877) 354-6555

D-Link Technical Support over the Internet:
<http://support.dlink.com>

Tech Support for customers within Canada:

D-Link Technical Support over the Telephone:
1-877-354-6560

D-Link Technical Support over the Internet:
<http://support.dlink.com>

Registration



Product registration is entirely voluntary and failure to complete or return this form will not diminish your warranty rights.

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